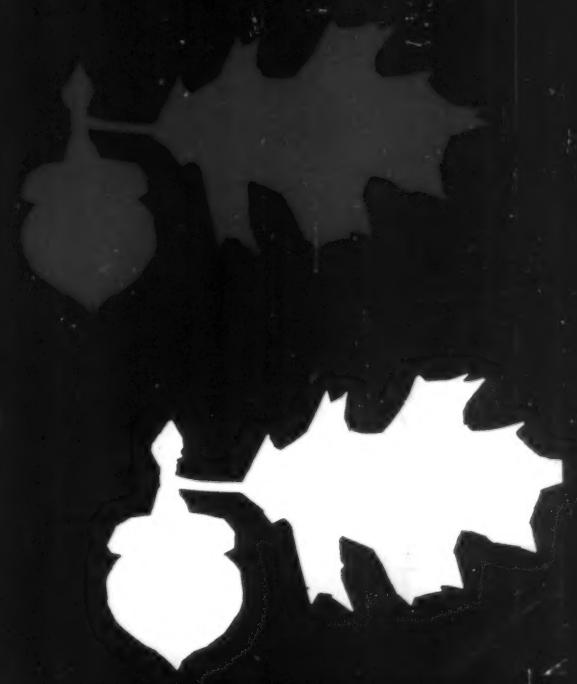


College Board Review

FALL 1958 • NO. 36



Elected Officers

B. Alden Thresher, Chairman
Frank D. Ashburn, Vice Chairman

Board of Trustees

B. Alden Thresher,* Chairman
Frank D. Ashburn,* Vice Chairman
Wilbur J. Bender
Col. William W. Bessell, Jr.
Frank H. Bowles*
Helen Brickell
Ben F. Cameron, Jr.
Charles R. Dalton
Margaret C. Disert
Hilton C. Holland
Arthur Howe, Jr.
John H. Jones
A. Blair Knapp
Archibald MacIntosh*
Lloyd S. Michael
Harriet Newhall
Mother Eleanor M. O'Byrne
Donald L. Oliver
Rosemary Park
C. William Reiley
Edward Sanders
Leslie R. Severinghaus
Walter F. Sheehan
Rev. Robert J. Slavin, O. P.
Herman A. Spindt
*ex officio

Staff Officers

Frank H. Bowles, President
Richard Pearson, Executive Vice President
S. A. Kendrick, Vice President, Examinations and Research
George H. Hanford, Vice President and Treasurer
Helen M. Gise, Secretary
Herman W. Campbell, Assistant to the President
T. Lealie MacMitchell, Assistant to the President, Visiting Representative
John M. Duggan, Director of Test Interpretation
Ann Pasanella, Research Associate
Rexford G. Moon, Jr., Director of the College Scholarship Service
Jeanne F. Minor, Assistant to the Director of the College Scholarship Service
Jack N. Arbolino, Director of the Advanced Placement Program
Robert E. K. Rourke, Executive Director, Commission on Mathematics
Herbert Wechsler, Legal Counsel

Publications Staff

S. Donald Karl, Director of Publications
Gene R. Hawes, Editor
Patricia M. H. Johnson, Associate Editor
Barbara L. Diehl, Assistant Editor
Vivian Males, Assistant to the Director of Publications

The College Entrance Examination Board is composed of 250 colleges and 37 member associations. Each member college has two representatives on the Board. Member associations have from one to six representatives. Members and their representatives are listed in the *Report of the President*. Meetings of the Board are held on the last Wednesday in October.



College Board Review

News and research of the College Entrance Examination Board published three times a year by the College Entrance Examination Board, 425 West 117 Street, New York 27, New York

College Board Review subscription: \$1.00 per year; single copy, \$.50. Subscription offices: College Entrance Examination Board, c/o Educational Testing Service, Box 592, Princeton, New Jersey, or Box 27896, Los Angeles 27, California.

Contents

News of the College Board, 1

A decade's changes in the College Board, 5
by Frank H. Bowles

The later history of early acceptance, 11
by Eugene S. Wilson

Major departures in financing college
The breakthrough in federal backing, 14
by Ralph C. M. Flynt

Charging the full cost of education, 17
by William C. Fels

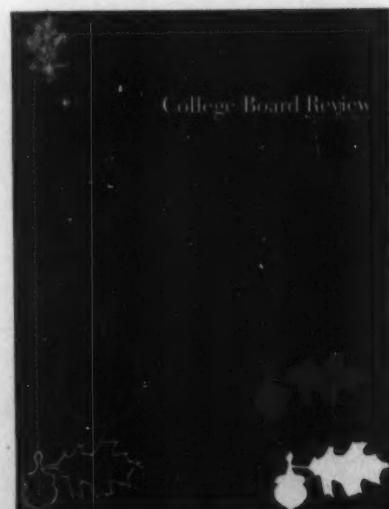
Needed: special climate, slower pace for superior students, 21
by James K. Feibleman

Varying curricular patterns for able college students, 23
by Charles C. Cole, Jr.

Test year for new physics course, 26
by Frederick L. Ferris, Jr., and Doris A. Lane

Georgia's search for solutions, 29
by J. A. Davis

News of the College Scholarship Service, 34



Illustrations: Series of transmutations of the College Board's acorn insignia are used by cover artist Dan Shapiro to suggest the kinds of changes wrought in the College Board over the last 10 years that are discussed in the opening article. Save for those by Vincent Malta on pages 20 through 22, drawings by Stanley Wyatt illustrate the issue's articles. Photographs courtesy of the articles' authors except for page 2, Carol E. Spette, and page 7, Gene Cook.

NEWS OF THE COLLEGE BOARD

Broader membership assured

Schools to be elected: The election of individual secondary schools to College Board membership was approved by the Board on October 29, following discussion and committee study for several years of possible methods of improving school representation in Board affairs. School representation has been limited in the past to that achieved indirectly through the membership of secondary school associations and the election of distinguished educators as College Board representatives-at-large.

Approval of the principle of direct school representation was embodied in a provision of the By-laws adopted a year ago which specified that schools which demonstrate an interest in and support for the Board's work are eligible for a limited term of membership. The limited term was made necessary, if many schools were to be represented over a period of years, by a limiting ratio of school to college members.

The plan presented by a secondary school subcommittee of the Committee on Membership and approved by the Board fixes the desirable upper limit of secondary school and associational membership at one-fourth of the total membership votes. Each school and college member is entitled to one vote; the number of votes accorded associational members varies according to the scope of their activities but is, at present, no greater than six.

This plan will permit the election of 50 schools in October 1959 upon nomination by the Committee on Membership and approval by the Board of Trustees. Although the normal membership term will be three years, the terms of the first schools elected will be for two, three, and four years to provide for annual elections and pre-

vent a complete change of school membership every three years.

A survey last spring indicated that more than 1,000 schools are interested in membership and willing to assume its costs and obligations. The annual dues will be \$25.

New members: Forty-five colleges and three associations were elected to membership at the annual meeting, increasing Board membership to 250 colleges and 37 member associations. A list of the member colleges appears on page 33.

The new associations are the Association of Colorado Independent Schools, the New York State Association of Independent Schools, and the Pennsylvania School Counselors Association.

The United States Naval Academy was also formally admitted to membership at the October meeting; it had been extended the privileges of membership at the April 3, 1957, meeting of the Board.

Test program developments

Testing dates: The pattern of six administrations of College Board admissions tests which was introduced in the fall of 1956 will be continued in 1959-60. The Scholastic Aptitude Test will be offered on all six dates and the Achievement Tests on four of the dates. The dates for 1958-59 and 1959-60 follow:

Tests	1958-59	1959-60
SAT and AT	Dec. 6	Dec. 5
SAT only	Jan. 10	Jan. 9
SAT only	Feb. 14	Feb. 6
SAT and AT	Mar. 14	Mar. 12
SAT and AT	May 16	May 21
SAT and AT	Aug. 12	Aug. 10

The Advanced Placement Examinations will be given during the week of May 11-15, 1959.

Bulletins of information which provide complete information on the administration of the admissions tests and the Advanced Placement Examinations of 1958-59 may be obtained by writing to College Entrance Examination Board, Box 592, Princeton, New Jersey, or Box 27896, Los Angeles 27, California.

1959-60 changes: Tests of listening comprehension in French, German, and Spanish will be offered on an optional basis in 1960 on a single date as Achievement Tests. In voting to make such tests available as part of the admissions testing program, the Board specified that they may be administered in any school or college wishing to have students examined for listening skill and willing to conduct the tests without remuneration and in accordance with Board security regulations.

The tests will be open only to students who register for the March Achievement Tests and will be offered at no extra fee. Listening comprehension scores will be reported in the same manner and at the same time as other March Achievement Test scores.

The Board's long-standing tests of reading comprehension in French, German, Latin, and Spanish will be administered, as in the past, on the December, March, May, and August Achievement Test dates at Board examination centers.

Another change in the 1959-60 Achievement Tests, as reported in the last issue of the *Review*, will be the withdrawal of Greek and Italian from the regular March Achievement Test administration. Previously given only on the March date, as they will be for the last time next spring, Greek and Italian tests will thereafter be administered by schools whose students wish to take them. The tests will be taken as



College admissions officers apply calculators to freshman class data at first College Board prediction workshop. L. to r., Robert A. Barr, Jr., Swarthmore; Calvin L. Crawford, Allegheny; Donald Myrick, New York University. Two more workshops are scheduled.

Achievement Test choices at no extra cost by students who register for the March date. Scores in Greek and Italian will be reported at the same time as those of other Achievement Tests. Further information on these tests will be sent to schools and colleges before the end of the current academic year.

Scholarship Qualifying Test: The future of the Scholarship Qualifying Test has been scheduled for discussion by the Trustees of the Board at a December meeting. The test was taken on October 21 by 388,071 students, of whom 172,694 were secondary school juniors and 215,377 were seniors. The group included 196,897 girls and 191,174 boys. The decision of the Trustees will be reported in the next issue of the *Review*.

Special meetings set

Eight regional groups: Representatives of College Board member colleges and interested schools will discuss their mutual admissions problems and Board activities in the third annual series of regional meetings scheduled for February and March. The eight meetings will be held at member institutions under the chairmanship of their directors of admissions.

The dates, regions, sites, and chairmen of the meetings are as follows: February 23-24, southern, Duke University, Everett B. Weatherspoon; February 27, eastern Pennsylvania, University of Pennsylvania, Robert H. Pitt, II; March 10, southern New England, Clark University, George H. Merriam; March 11, metropolitan New York, Columbia University, Joe Jefferson; March 11-12, western Pennsylvania, Wilson College, Mrs. Paul W. Leitch; March 16-17, midwestern, Western Reserve University (Hollace G. Roberts, Western Reserve University, host; Charles D. O'Connell, Jr., University of Chicago, chairman; Edward J. Roberts, Lawrence College, secretary); March 16-17, upstate New York, Wells College, Eleanor Denison; March 24, northern New England, Massachusetts Institute of Technology, B. Alden Thresher.

The West Coast Committee of the Board has tentatively scheduled its next meeting for June 16-17 in San Francisco.

Prediction seminars: The success of the first Board workshop for admissions officers on statistical methods used in predicting grade averages has resulted in the scheduling of similar seminars for February 10-13 and

March 30-April 1, 1959. They will be held, respectively, at the Hotel Mo- raine on the Lake, Highland Park, Illinois, and at Georgetown University. Approximately 20 admissions officers will be invited to attend each workshop.

In the first seminar, held September 3-5 at Gould House, Ardsley-on-Hudson, New York, 22 participants used a special workbook which helped them to obtain predictors for their own institutions based on data provided by a freshman class sample.

Journalists' conference: A conference on college admissions for education editors and writers will be held by the College Board at the Sedgewood Club, Carmel, New York, on January 5-7, 1959. The meeting is conceived as an opportunity for representatives of the press to discuss informally with educators many of the problems associated with college admissions which are of popular interest.

Among the school and college people who will participate are Frank D. Ashburn, headmaster, Brooks School, North Andover, Massachusetts; Mother Gertrude Brady, registrar, Manhattanville College of the Sacred Heart; Ben F. Cameron, Jr., director of admissions, University of the South; Mildred G. Fox, college consultant, Evanston Township High School, Evanston, Illinois; John S. Hafer, dean of admissions, Syracuse University; Harold Howe, II, principal, Newton High School, Newtonville, Massachusetts; Abraham H. Lass, principal, Abraham Lincoln High School, Brooklyn, New York; Helen McCann, director of admissions, Barnard College; John U. Monro, dean, Harvard College; B. Alden Thresher, director of admissions, Massachusetts Institute of Technology; Clyde Vroman, director of admissions, University of Michigan; and Eugene S. Wilson, dean of admission, Amherst College.

Score interpretation aids

For counselors, candidates: Almost 150,000 copies of a leaflet, *Your College Board Scores*, were requested by 1,600 schools in the first two months following announcement in September of its availability. The leaflet was prepared by the Board to coincide with

the change in policy which permits schools to release their test scores to students beginning with the December 1958 tests. Copies of the leaflet, which provides nontechnical information on the use of the scores in college admissions, may be obtained free on request by schools which wish to distribute it to students when they receive their scores.

A companion booklet, *College Board Score Reports, A Guide for Counselors*, was published at the same time to aid school administrators, guidance officers, and teachers in their interpretation of Board scores. The booklet, which contains information and explanatory material supplementary to that given in the candidates leaflet, has been distributed to schools which regularly have Board candidates. The cost is \$.50 per copy.

Both publications may be ordered by writing to College Entrance Examination Board, Box 592, Princeton, New Jersey, or Box 27896, Los Angeles 27, California.

Russian education discussed

Chauncey, Rourke speak: Representatives and guests attending the October 29 meeting of the College Board received first-hand accounts of the Soviet educational system by two recent visitors to Russia, Henry Chauncey, president of the Educational Testing Service, and Robert E. K. Rourke, Executive Director of the Commission on Mathematics.

The speakers' reports of their observations and of the significance to the United States of Russia's educational methods and objectives will appear in the next issue of the *Review*.

Mathematics report due

Commission completing work: The report of the Commission on Mathematics, containing recommendations for the improvement of the secondary school college preparatory mathematics curriculum, has reached the final stages of preparation and will be widely distributed to mathematicians, teachers of mathematics, and other educators early in 1959.

Work on the report is proceeding under the supervision of Robert E. K. Rourke, who has been on leave from

Kent School since July 1 to serve as Executive Director of the Commission. He succeeded Albert E. Meder, Jr., who served as Executive Director for a year and one-half while on leave from Rutgers, the State University of New Jersey.

College Board elections

New Chairman, Vice Chairman: B. Alden Thresher, director of admissions, Massachusetts Institute of Technology, was elected Chairman of the College Board for a two-year term at the annual meeting of the Board on October 29. Professor Thresher served as Vice Chairman from 1955 to 1958. He succeeds Archibald MacIntosh, vice president, Haverford College, who was Chairman for three years. Dr. MacIntosh received the members' vote of appreciation for his leadership during a time of unprecedented growth in the Board's membership and programs.

Frank D. Ashburn, headmaster, Brooks School, North Andover, Massachusetts, succeeds Professor Thresher as Vice Chairman of the Board. Mr. Ashburn served previously on the Committee on Finance and Audit and was chairman of the Committee on Examinations from 1947 to 1949.

A change in the term of office of the Chairman and the Vice Chairman from three to two years was approved by the members on recommendation of the Board of Trustees. In presenting the recommendation Professor Thresher explained that it was the belief of the Trustees, as well as of the Chairman and Vice Chairman, that reasonably rapid rotation of officers is desirable in an organization of the Board's character.

Seven new Trustees: New members of the Board of Trustees elected to serve from 1958 to 1961 are Helen Brickell, educational counselor, Bronxville Senior School, Bronxville, New York; Ben F. Cameron, Jr., director of admissions, University of the South; Charles R. Dalton, director of admissions, University of Rochester; Margaret C. Disert, dean, Wilson College; Arthur Howe, Jr., dean of admissions and student appointments, Yale University; John H. Jones, headmaster, Riverdale Country School, New York, New York;

May 20 Reply Date

The 1959 Candidates Reply Date, May 20, will be observed by 159 College Board member colleges. Institutions subscribing to the date, which permits candidates to consider all notifications of admission before making a final choice of college, are indicated in the list of members which appears on page 33.

Under the terms of the arrangement a participating college is bound not to require any candidate admitted as a freshman to give notice before May 20 of his decision to attend the institution. Exceptions to this rule are made by some colleges in the case of scholarship applicants and single-choice candidates admitted early in the year with the understanding that they will attend the admitting college.

In all cases, the candidate who has made a decision before May 20 should be encouraged to notify all colleges from which he has received acceptances as soon as he has made a choice among them.

and Donald L. Oliver, director of admissions, Boston University.

They succeed the following Trustees whose terms of office have expired: Douglas M. Knight, president, Lawrence College; Otto F. Kraushaar, president, Goucher College; Jean Fair Mitchell, headmistress, Brearley School, New York, New York; William L. Pressly, president, Westminster Schools, Atlanta, Georgia; Catherine R. Rich, registrar, Catholic University of America; and Russell H. Rupp, principal, Shaker Heights High School, Shaker Heights, Ohio.

Miss McBride honored: Katherine E. McBride, president, Bryn Mawr College, was elected to an unlimited term as honorary representative-at-large. A former Chairman of the Board, Miss McBride was cited by Professor Thresher for her long service and "extraordinary contributions" to Board activities.

COLLEGE BOARD RESEARCH NOTES

Differential prediction weighed

Consultant named: Paul L. Dressel, director of evaluation services, Michigan State University, was recently appointed a consultant to the College Board on differential prediction.

In differential prediction, which was recently discussed in an article in the *College Board Review*,¹ an applicant's probable average grade in each of a wide variety of kinds of college course offerings is estimated.

Dr. Dressel has already reviewed published studies and is now evaluating existing programs by visiting colleges and research centers. His report, which will take into account both theoretical and practical considerations, will be submitted to the Board's Aptitude Test Committee.

Index characterizes colleges

Questionnaire developed: An effective means by which a college might evaluate its overall character or the kind of environment it provides for collegiate life should be helpful to a college's self-understanding and for directing any major desired changes. Such self-understanding should also prove useful in formulating admissions policy. It was with these possibilities in view that the College Board sponsored a study recently completed by C. Robert Pace, professor of psychology and education, and George G. Stern, associate professor of psychology, of Syracuse University, for which the authors developed a questionnaire called the College Characteristics Index.

This index contained 300 questions designed to elicit responses that would help describe the environment consti-

tuted by a college. Some typical examples of responses were: "Competition and personal rivalry are highly stressed." "The professors really talk with the students, not just at them." "It's important socially here to be in the right club or group." "Modern art and music get little attention here." "There is very little studying here over the weekends."

Students, faculty agree: Responses from students and faculties of five colleges showed first, that colleges differ remarkably from one to another in the features which students and faculties consider characteristic; and second, that students and faculties tend to agree on their descriptions of individual institutions. For example, one college was consistently described as "highly theoretical-intellectual," emphasizing understanding for its own sake, critical judgment, and independence. Another college environment was consistently said to stress social activity, school spirit, and enthusiasm.

"Broad-range" SAT validated

Alternate versions tried: A recently completed study showed that two differing versions of the College Board's Scholastic Aptitude Test—one constructed for students of high ability and the other for students of low ability—would discriminate slightly better than the present SAT at the upper and lower regions of the 200 to 800 score scale.

The increase in effective measurement was found to be small enough, however, to be outweighed by the administrative problem of directing each student to the appropriate version.

This "multi-level" study was conducted for the Board by Edith M. Huddleston and William H. Angoff of Educational Testing Service. Several

factors indicated a need for such a study. The SAT of the early 1950's was designed to discriminate most effectively in the 400 to 600 range. As the number of students taking the SAT increased from year to year, more students scored near the extremes of the scale. Differentiation at these levels became important as the nature of Board member colleges changed, as admissions competition became keener at the upper level of the scale, and as scholarship programs found it necessary to identify differences in the ability of students scoring above 700.

Test difficulty varied: The multi-level experiment compared versions of the SAT that had been altered in two ways. In one, a single "broad-range" test containing relatively few test questions of average difficulty but relatively more questions of high and low difficulty was constructed. In the other, two "narrow-range" tests, one difficult, the other easy, were constructed. Candidates in the experiment who were to take a narrow-range test were given the appropriate one after working a short "routin" test.

Experimental testing with both the single, broad-range test and the two narrow-range tests was conducted at 19 colleges. Consistent with test theory, the narrow-range tests were slightly more reliable statistically than the broad-range test for the high and low-ability students. Yet the scores of both methods of testing predicted college grades about equally well.

On the basis of test theory, editions of the SAT in regular use during the past few years have been progressively developed as broad-range tests. Essentially, the multi-level study confirms the advisability of this change. Users of the SAT may now feel confident that the test discriminates effectively throughout the 200 to 800 scale.

¹ Paul Horst, "Differential prediction in college admissions," *College Board Review*, No. 33, p. 19.

A decade's changes in the College Board

Sevenfold size increase, school membership, regional operation, greatly broadened concerns mark metamorphosis since 1948

October 1958 marked the tenth anniversary of the meeting in which the College Board took its first steps towards a new organization and a new program, after the separation of January 1948 had brought the Educational Testing Service into existence.

During these 10 years, changes have taken place that form the background for our present problems and plans. The principal change has been in size, and this has been pervasive. We have more of everything—candidates, members, meetings, publications, staff. This change has been impressive in dimension—amounting to an increase approximately sevenfold in every category. It is still going on and none of us knows where it will stop, although we do know that there must be a limit.

Perhaps the most interesting thing about this change is not its size but the fact that it has had very little effect on the College Board's basic program of tests. Our test series has resisted stubbornly every attempt at change. A college transfer test, an essay test for English composition, a science inventory test, and, most recently, the advance forms of a proposed series of tests in depth, called the Tests of Developed Ability, have all made their appearance, had their trial, and been submerged under a total loyalty to the existing program. Even the one program which has gained acceptance—the Advanced Placement Program—is essentially more of what we have always done, and the acceptance it has gained has been based on its traditional values, not on the change it represents.

What I am leading up to is the comment that this change in size, impressive though it is, is not the true

change with which we are dealing. The true change goes much more deeply, is far more pervasive, and has far more lasting power. It is a change of attitude toward education on the part of our nation, a change which has moved an entire generation from the high school standard to the college standard.

When I speak of a change in attitude, I mean that there is apparently now a majority acceptance of the idea that education, to be complete, must include college. This does not mean that a majority of students will go to college—at least not for a while. It does mean that pressure will be in this direction and that both college programs and college facilities will continue to be changed by this pressure until this goal is reached. The problem of change under pressure is one that has been going on for nearly 20 years and actively gaining momentum for the last 10. We do not know where or when it will stop.

Although this change is by now an accomplished fact, we have by and large failed to face it in our college admissions process. That process, which includes our testing program, is still basically the one established many years ago when there was only a minority acceptance of the idea that education, to be complete, must include college. In its present operation, it seems each year to fall a little farther short of operating satisfactorily, and, in fact, it is kept operating only by a series of improvisations and special arrangements.

The difficulties encountered in adapting the admissions process to present requirements have, over the last 10 years, constantly brought the Board up against the problem of whether or not to act as a regulatory agency. Ten years

ago it was acting as such an agency and in a very significant way, by collecting college choice information from candidates and forwarding it to colleges. This was discontinued in 1950, not because it was not helpful in admissions operations, because in fact it was, but because it became unenforceable through consistent attempts by candidates aided and abetted by some schools and by some colleges to evade the rule.

Admissions problem intensifies

In its next form, the regulatory role appeared in the Uniform Acceptance Date, later modified into the Candidates' Reply Date, a form of self-denying ordinance by which colleges pledged themselves to allow a reasonable minimum of decision time to candidates. We are at present living uneasily under this ordinance while searching for newer and better ways of regulating the admissions problem. The problem itself has gotten worse both because of increasing numbers of applicants, larger numbers of colleges and schools involved in it, and extension of the scope of the problem into the eleventh grade.

Because it has become worse, the attempts to regulate it have increased in number. During the past year, we have



Frank H. Bowles,
President of the College Board, delivered
the address from which this article has
been adapted at the Board's fall meeting.

considered, or are now considering: first, early acceptance plans which set up controls on applications through a candidate declaration of single choice; second, a matching plan where candidate and college choices can be matched; third, wave plans which will limit candidate choices within any one wave of applications; fourth, a clearinghouse where searching candidates and searching colleges can meet; and fifth, urging candidates into groups with a mechanism of two candidates' reply dates established by different groups of colleges. But we have not acted on any of these suggestions.

Sharp membership increases

What I am saying, of course, is that as the admissions problem has become more difficult the role of the College Board as a possible regulatory agency has been accentuated. Whether or not to assume such a role is thus not only a historical problem but a current problem and certain to be a future problem.

The reason why the regulatory role is such a problem is that the Board was not designed with a police function in mind. A regulatory agency must command sanctions in order to enforce its regulations, but the only sanction the Board can enforce is to withhold information. Yet the Board was set up as an information gathering and supplying agency and cannot use its sanction without violating its real purpose. But, so long as its members can unite in self-denying ordinances, and can themselves enforce their own denials, the Board can serve as a vehicle for carrying such ordinances from year to year. It is only when we move beyond this role that we always encounter difficulty and disagreement. This is where we are now, and this is where I must leave this particular problem. It is in the hands of a newly authorized committee, the Committee on Entrance Procedures, and we wish its members good fortune in their search for a solution.

The second major change which has taken place has been with respect to membership. After staying fairly stable in membership for about 50 years, the College Board began a slow growth immediately after the close of the war, and in recent years—particularly this last year—it has been growing with al-

most terrifying rapidity. I am not going to undertake a discussion of why this has happened, although perhaps I would if I felt that I really knew. I am here concerned only with the problems this has created. The real problem from the very beginning has been the question of whether membership should be open to any institution, or whether it should be open only to those meeting certain requirements.

It has been decided at length—and at length means five years which have been spent working on the problem—that there should be requirements for membership, that these requirements should be in terms of use of Board programs, that it is permissible to make adjustments in these requirements in terms of policies established by individual institutions; that, in particular, tax-supported institutions should be welcomed into Board membership, even though their compliance with Board membership requirements might be in different terms than the compliance of independent institutions; that it is not appropriate for the Board to accept an accrediting function in determining how its tests are used by different institutions; and that it is not appropriate to set any numerical limit upon Board membership. With these



decisions, most of the membership problem seems under control.

But there still remains one large membership question to be decided. This is whether secondary schools may have direct membership in the College Board. The question bristles with operational difficulties, but if we set these aside for the moment it boils down to a choice between direct or indirect participation by secondary schools in the making of decisions which affect admissions policy.

The schools have had limited indirect membership for many years, and, under the former articles of association, a limited amount of direct representation through the representatives-at-large. But neither of these methods

of representation has seemed adequate. Therefore, provision for direct representation beginning next fall has been developed.

A third change with which we have had to deal has been that of governance, management, and organization. I will not spend much time with this set of problems because we have dealt with all of them so recently, but I will summarize what we have done. We have responded to growth by changing from a town-meeting type of government to a representative government, though we have, in an unusual constitutional form, retained for the town meeting—that is, for the annual meeting—the final right of decision. We have changed from management largely by committee to management by a professional staff which reports to committees. And we have changed from an organization in which all questions were discussed in the one or two annual meetings to a sizable structure of meetings held on many different topics in many sections of the country.

In this connection let me now report that the Trustees have asked the staff to present, as soon as possible, plans for opening offices in Chicago, Atlanta, and San Francisco, in order to make possible better College Board services for schools and colleges in those regions. If the plans move with reasonable speed, we might well be prepared to open such offices within a year.

The fourth major change which has taken place has to do with relatively new areas of College Board concern.

Ten years ago we were concerned mainly with entrance examinations and in a fairly narrow technical sense. We had only recently emerged from a long period in which the Board's real purpose was the control of the college entrance curriculum through definitions of requirements and the setting and publishing of examinations. We had abandoned that purpose and for the moment were without any stated purpose other than the management of the testing program.

But events forced us out of this essentially static position. A fairly simple change in the nature of *The College Handbook* revealed this as an instrument of great potential value in the admissions process and pointed the way to improved admissions through improved communications between



Gesturing, Chairman B. Alden Thresher makes a point at Trustees' meeting in September; below, President Frank H. Bowles replies

The Trustees

"The business and affairs of the Corporation shall be managed by its Board of Trustees, subject, however, to the authority of the members at a meeting to initiate or amend any action or policy...." Thus do the By-Laws of the College Board define the role of its 25-member Board of Trustees. A body widely representative of the country's schools and colleges, the Board of Trustees acts on policy proposals that develop through the College Board's committee structure and recommends final action by the full membership. Seven Trustees are elected annually for three-year terms.

school and college. A study conducted for us by Byron S. Hollinshead under contract with the Commission on Financing Higher Education opened up for the first time the problem of the nation's wastage of human resources and suggested the tremendous values that might come from an improved program in secondary schools for college planning and guidance, forming a background for our present growing program in this area. A survey of admissions operations done for us by Edward Sanders, dean of students and dean of admissions at Pomona College, opened to us the manifold problems inherent in the whole structure of college scholarships and led directly to the formation of the College Scholarship Service.

More recently, a whole series of suggestions has come back to us that we renew our interest in the secondary school curriculum. We have recently seen the completion of a report—the report of the Commission on Mathematics—which has had exactly such a purpose. And were I to give a lengthy report on Advanced Placement, it would be a discussion of still another activity which touches directly upon the nature of the secondary school curriculum, and which appears to be having a significant effect on college preparation in schools which have participated in the Program.

What I have been doing, of course, is listing the various areas into which the College Board has moved during the last 10 years. We have moved into



these areas because there was work to be done, because there was no other agency in which schools and colleges could join on a national scale to do such work, and because it was work which fitted easily and normally into the general pattern of the Board's activities. In the process of developing and enlarging this program, we have encountered organizational and financial difficulties of which the membership is well aware. At the moment, these difficulties appear to be under control.

This, in effect, is the background of the Board's present status and position.

Since the last meeting of the Board, much of our time has been taken up with problems which fall under one or

another of the categories I have described.

The first problem of major size with which we had to deal was that of the Scholarship Qualifying Test. When we learned last January that the National Merit Scholarship Corporation had decided to change its program to the extent of using a different testing date than the one announced for our 1958 SQT, and would also be using a test not prepared by the College Board, we were faced with a decision as to whether we would give our SQT as already announced or would withdraw from this testing field.

We decided that since the 1958 test had already been planned and was well along towards preparation, that since the announcement had been made, and that since there were a number of scholarship competitions dependent upon our test, we would proceed with our plans. We did not, frankly, expect a large number of candidates, and had in fact braced ourselves for a financial loss as the almost inevitable result of our decision.

Against this background, the very large advance registration of some 400,000 students for our SQT came as a surprise and as an indicator that a simple, inexpensive fall testing program meets needs that are not met by any other test. Ever since it became apparent that our SQT would have a large registration, the Board's staff in consultation with our colleagues at ETS has been discussing the steps to be taken regarding future administrations of a fall test. It is now our opinion that such a testing program should be continued, and that it should be directed primarily to the problems of college planning and guidance. But it must be pointed out that this opinion has not yet been discussed with either our Committee on Examinations or with our Board of Trustees.

New composition test—pro and con

The second major problem with which we have been dealing during the past year is the familiar one of testing for competence in English composition. During the past year the College Board has received a number of requests from presidents of member institutions for the introduction of a new type of English composition test. The form sug-

gested is a one-hour period to be set aside for candidate use in writing a composition that would be duplicated by the Board and sent to colleges requesting it, to be read and judged by the individual college. This suggestion has come before and has been discussed by the Committee on Examinations during the past year.

In these discussions, members of the staff of the Board have frankly not favored the suggestion. We do not believe that such a test can be considered as a valid or a reliable admissions instrument, and we believe that judgments based on such an instrument will probably be worse than and certainly no better than judgments based on existing instruments for the testing of or the prediction of competence in English composition.

Therefore, if this is a test, it is not a good test. On the other hand, if it is not a test but merely an attempt to emphasize the importance of English composition by getting papers that will not otherwise be used, then it is hard to see why otherwise useful Achievement Tests should be elbowed aside to make room for it. But I must emphasize that this is a professional opinion, not a policy decision. The policy decision on this matter must be made by the Board's committees, and ultimately by the Board's membership.

From an administrative standpoint we believe that a test of this kind can be introduced. By setting aside one of the three hours available in the Achievement Test period for such a test, by making three copies of the candidate's paper through a simple duplicating process, and by forwarding these papers (which we estimate will average five sheets per candidate) to the institutions specified by the candidates, the test can be handled within our present cost structure provided that the Board is not asked to read or grade the papers or to maintain a file of the answer sheets.

By the use of such arrangements, such a test can be readied for inclusion in the testing program for 1959-60. Because arrangements for the 1958-59 testing program have by now been substantially completed, a test like this cannot be included in next spring's program without considerable dislocation of plans and considerable increases in planned costs.

In the normal course of events these various facts will be considered by the Committee on Examinations this coming spring, will come before the Trustees shortly thereafter, and will be reported to the full Board membership for vote at the October 1959 meeting.

The third major problem with which we have dealt during the past year has



to some extent been indicated by my discussion of changes over the last 10 years. The large volume of candidates, and the necessity for maintaining a rigid time schedule to meet the requirements of our members, has required extensive additions to the facilities of the Educational Testing Service. The new buildings that have accordingly gone up during the past 18 months are well and at the same time economically designed.

An important part of the problem of facilities has to do with equipment, and here too, the Educational Testing Service is showing a wise foresight in its planning. We have real reason to hope that the problems of handling large numbers of candidates, much larger than we now handle, will be dealt with by new equipment especially designed for the purpose.

The fourth problem with which we have dealt this year has been that of preparing score interpretation materials to be used in connection with the anticipated release of College Board scores to final candidates after December of this year. These materials have been published.¹ We believe they will serve the purpose for which they are intended. We also believe that in themselves they are only a beginning on the massive problem of educating teachers, guidance officers, students, and their parents, with respect to the admissions process.

There is in preparation another

¹ *Your College Board Scores*, a leaflet for candidates, and *College Board Score Reports*, a guide for counselors.

booklet dealing with college guidance, and still other materials are being discussed. It is not, and I believe it should not be, the intention of the Board's staff to prepare extensive guidance materials. But we do feel that we are taking only elementary precautions when we produce materials designed to help the users of our test scores in getting the most benefit out of them.

The fifth area of major concern with which the staff and committees have dealt during the past year has been that of finances. First, we had a successful year in that it enabled us to fulfil our commitments to the Educational Testing Service, to replace half of the sum we had withdrawn from our contingency reserve, and to have a modest sum left over for addition to working capital. Second, we got through the year without any major increases in staff. We shall not be able to do so next year because of increasing work load. Third, the work done by the staffs of the Board and the Educational Testing Service in controlling costs has been an outstanding example of care and cooperation. Despite an unexpectedly large increase in test-candidate volume, the per candidate cost was lower than our original estimates.

A sixth area in which much staff and committee time was spent during the past year was that of new admissions plans and new tests. I have already commented on the number of proposals which came before the College Board for consideration last year in the continuing search for some means of bringing the complicated admissions situation under reasonable control. Unfortunately, all of these plans, as well as a plan or rather a set of plans advanced by the Board's staff, turned out to be unacceptable for one reason or another.

The one firm step taken during the year in an attempt to ameliorate the difficulties encountered by some candidates and some colleges was taken not by the College Board but by the Association of College Admissions Counselors. On its own initiative, the ACAC opened a clearing center where the records of unplaced applicants could be examined by colleges with vacancies to be filled. The enterprise was a successful one and is to be continued with certain clerical improvements, and it now appears that other centers with

like programs are to be opened. Although these plans are going forward, there are at present no fully developed proposals for cooperative action before any of the Board's committees.

One proposal which did emerge as a by-product of the various plans to deal with the complexities of the application problem was a concrete suggestion for a new form of admissions test to be called the Comprehensive Achievement Test. A specimen form of the test is being prepared and is to be circulated among the membership for examination and for consideration as to its probable value in the admissions process. The intent of the test is to make possible reliable and valid testing of subject-matter competence that will be predictive of college success as early as the end of the junior year in secondary school. If this could be achieved, it would have great value in the admissions process.

Regional meetings a success

At present we don't have direct evidence bearing on this point since no experimental form of the test has in fact been made. We have some indirect evidence stemming from the trial administrations of the Tests of Developed Ability; it indicates that questions which draw upon two or more subject fields are likely to be better predictors of ultimate college success than questions which are limited to one subject field. But of course we cannot produce direct evidence until we have made and tried out a form of this test, and this is likely to take some time.

Three other major activities of the past year should be mentioned in completing a review of the year's work. This fall marks the end of the four-year period that had been established by vote of the College Board in 1954 to give member institutions time to bring their use of Board tests into compliance with the Board's membership requirements. I am happy to report that all member institutions have met the standards established by the membership committee.

I can also report that the regional meetings, authorized a year ago, were carried out in accordance with plans and have proved an even more satisfactory method of communication with the membership than had been ex-

pected. The experiment of including a large number of representatives of secondary schools among those invited to the meeting proved most successful. It provided opportunity for frank and direct discussions of admissions problems and clearly has opened a new and useful channel of communication between schools and colleges.

Most of the planning for the regional meetings to be held this year has been completed. We anticipate a considerably larger attendance at them than we had last year, and we expect to increase the number of regional meetings next year.

I have not yet given special mention to the College Scholarship Service. During the past year the College Board has by agreement with ETS assumed responsibility for the work of the former Sponsored Scholarship Services program. This program office was founded by ETS and has operated for some years, assisting, among other sponsors, the General Motors Corporation. With this merger the Board assumes full responsibility for all scholarship activities within the two organizations. Immediate responsibility for formulation and supervision of Board policy in the scholarship area, including services to sponsors, has been given to our CSS Committee.

This ends the report on what has been a busy year.

The work of the College Board for the coming year is obviously pretty well determined by our present program. Our commitments with respect to meetings, publications, and tests have long since been made. But there are problems and plans ahead of us which are not part of our committed program.

These are problems which, during the years when the Board was smaller, more homogeneous in membership, and more limited in program, lay essentially at the outer edge of our area of concern. But as the Board and its program have developed we have each year come nearer to these problems until now we are virtually forced to make plans to deal with them.

The first of these problems is perhaps best described as public information. The College Board has come to be regarded as an information center with respect to admissions problems and is under fairly constant pressure to pro-

duce such differing types of public information as background material for education writers in their stories and commentaries on college entrance, formal speeches or articles for professional audiences, and speakers, formal or informal for audiences of pupils or parents.

Because of this pressure we have planned a conference with education writers on the current status and problems of college admission. We have drawn the idea in part from a successful conference with these same writers held last spring by ETS, and in part have come to it in self-defense because of the number of requests for information or off-the-record background comments that come to us during the course of the preparation of the annual crop of news stories on college admission.

It was our thought that a conference planned essentially as a question-and-answer meeting could be used to present facts concerning the actual admissions situation. Admittedly these facts might be less exciting than some of the scare headlines that have frightened parents and pupils for the last several years, but the field is one which could easily do without some of the present excitement. Acting on professional advice we are now planning a conference for early January. Our only concern now is that of drawing together a group of admissions and guidance officers who will be available to join the Board staff in the actual discussion of admissions problems.

Proposed guidance aids

The second problem which the Board is now approaching closely is that of guidance. Within this area there are several separate sub-problems. First there is information—that is, the assembly and dissemination of the facts with respect to admission to college. The College Board now does some of this in its publication of *The College Handbook*, but the colleges themselves are the most successful publishers of these facts in the information they circulate concerning the characteristics of their freshman classes.

But this information on class characteristics, as issued by colleges and unfortunately not by all colleges, is only one presentation of the facts. It would

be an interesting idea for secondary schools to undertake, for the benefit of their college-bound pupils and of the colleges with which the schools deal, the preparation of statements on the characteristics of their graduating classes and of their fortunes in college entrance. If as many as 500 schools a year published such statements, there should follow—particularly among pupils and parents—a really noticeable effect on the understanding of college entrance problems and a consequent easing of the guidance problem.

Another guidance problem has to do with the training of guidance personnel. School guidance officers are much



the same kind of people as college admissions officers. That is, they deal with the same students with respect to the same problems, using the same information. They suffer together the handicap of having very little formal training for the work they do, largely because almost no such training is offered by any university school of education anywhere.

In this connection, the College Board held a workshop on the statistical prediction of college performance at New York University's Gould House this fall. Twenty-two college admissions officers attended the three-day program and worked from 16 to 18 hours a day at learning methods of predicting college success. We had so many applicants for the workshop that we plan to hold three more this year, one in the East, one in the Chicago area, and one on the West Coast. These offerings should meet present college demands for this kind of instruction. Now we need to go into the question of whether comparable conferences on problems of college guidance for school officers should be set up.

Another guidance project, which is also intended essentially as training, is still in early planning stages. It would

provide for the development of one or more films on college guidance problems and techniques to be distributed by the College Board, both as instructional material to familiarize inexperienced guidance officers with the nature of their future tasks and as program material for PTA groups and similar organizations concerned with the nature and results of guidance programs.

Our third major problem ahead is that of curriculum. It is, I think, fairly obvious that there is a difference of opinion between colleges and secondary schools about what constitutes college preparation. The English composition proposal already referred to is a clear case in point, and the work of the Commission on Mathematics, essentially an attempt to reconcile this difference of opinion, is another.

Sooner or later there will be a major attempt to reconcile these differences, comparable for our time with the last such undertaking—the formation of the Committee of Ten—which took place 70 years ago. Perhaps it will be comparable in result, for the work of that committee was of tremendous influence in fixing the nature of the college entrance curriculum. The attempt when it comes will almost certainly be on a larger scale than the College Board by itself would care to undertake. But when it does come, the Board will have at hand clear evidence, based on experience with its present program—including the Advanced Placement Program—that, given defined goals and agreement as to frame of reference, schools and colleges can resolve their differences concerning college preparation.

It may well be that the College Board should undertake to bring about such a large-scale attempt to review the basic problems of college preparation, and this is a matter which must be discussed in our committees and at our meetings. But we must move carefully on this problem. For nearly 20 years the Board has taken the position that it does not operate its testing program to influence curriculum. Operating from this position it has been able to serve an ever-increasing circle of schools and colleges. If it were to change its position with respect to curriculum influence, it would inevitably change its position with respect to the group it now serves.

The later history of early acceptance

The faculty at Amherst College has long marvelled at my power to predict the future. How could I select the students I have, students who have displayed such uncanny ability to cut through to the core of any problem, students who were so gifted in the arts of communication, students who were wise beyond their years? Even on those rare occasions when our first-year students seemed somewhat less gifted intellectually, our teachers have never questioned their ability to respond enthusiastically to great teaching. Many times at Amherst we have had the satisfaction of watching a student who entered with an IQ of 105 to 110 leave with an IQ of 140 to 150 and a magna cum laude or a summa cum laude degree.

Our coaches, too, have again and again expressed happy amazement at the manner in which our young, somewhat physically uncoordinated, lightweight boys have grasped the essentials of contact sport and presented victory after victory over heavier foes. Days of gloom and defeat are so rare as to require explanation. Last fall when our undefeated football team fell before an inspired Williams College team 39 to 14, we discovered after careful investigation that the loss was apparently part of a plan which had been formulated by our own players and coaches.

Our coaches had heard a rumor that

the president of Williams College had said he would dismiss the Williams coach if Williams lost, for it was believed that the success of Williams' big fund-raising campaign depended on a victory over Amherst. When our coaches passed these reports on to the Amherst team, and suggested that for certain reasons they wanted to keep the present Williams coach, our students perfected a plan which brought the results you all know.

Amherst alumni have long known that I have exceptional powers of prediction. They have repeatedly expressed in public an enthusiastic endorsement of our policies and practices. Have you ever heard an Amherst alumnus voice a complaint about admission at Amherst? Have you ever heard it even hinted that the students we accept today are a creepy, colorless bunch of grinds? Is there any other college administrator who can say the same? And when you have met an alumnus whose son has been rejected, have you ever heard him complain or attack the college? No. What you have heard is probably something like this: "The Committee was right. My boy was not good enough for Amherst." Or perhaps a remark like, "I knew he should not have applied to Amherst. He has been accepted by Harvard, Williams, Stanford, and Cal. Tech., and he will just have to choose one of these. It is possible to get an education at these institutions, you know."

When the Heavenly Seven constellation of women's colleges announced in the winter of 1958 that they would grant firm acceptances beginning in the fall of 1958 to certain exceptional candidates on the basis of work completed through Grade 11 and tests taken in the junior year, tremors of surprise, amazement, delight, and suspicion shook the bodies and minds of secondary school guidance officers and

also the admissions officers of the non-seven women's colleges, or the Mundane Many as I shall call them.

This move, which was announced by the Heavenly Seven as revolutionary, earth-shaking, chaos-busting, was, in reality, nothing but a formal extension of a policy that had been practiced for many years by some male admissions officers. For as long as the oldest admissions officer can remember it has been a custom for admissions officers on visiting a school to slip the nod to headmasters and principals that certain exceptional students would be given an "A" rating, which promised



A senior year free of anxiety

admission provided always that the students finished the year with a strong record and performed satisfactorily on College Board tests.

The revolutionary aspect of this new program for female candidates lay in two factors: (1) that certain of the Heavenly Seven were now ready to admit publicly that a few of their candidates were exceptional (those of us on the outside had been led to believe that all of their candidates were exceptional), and (2) that now these exceptional candidates would have to commit themselves irrevocably to one in-



Eugene S. Wilson is dean of admission at Amherst College.

tution at an early date in the senior year.

According to the Heavenly Seven the rewards of this new program were: (1) that certain secondary school students would be able to enjoy a calm senior year free from anxiety about acceptance, and (2) that there would be a reduction in the number of duplicate applications filed by the top-ranking students with a concomitant reduction of labor for guidance officers and admission committees.

When representatives of the Heavenly Seven were asked how many students they would accept under this plan they estimated the number as somewhere between 10 and 20 per cent.

Had the Mundane Many had the courage and the vision to allow this new program to run for a few years, history would have recorded another failure. I shall not mention all the reasons for this statement, but you may be interested in one.

Mundane Many forestall chaos

In the first year of the program each of the Heavenly Seven colleges had from three to eight times as many candidates for early acceptance as could be accommodated. Since it cost nothing extra to get this early assessment, most secondary schools allowed the students in the top 10 per cent of their class to take a shot at early acceptance. If rejection followed, there was ample time to file applications at other institutions.

When the Heavenly Seven announced in December 1958 the names of the early accepted, the numbers of those refused so far exceeded the accepted that a double anxiety swept through the ranks of the non-accepted college-bound girls. Had not the Mundane Many stepped in at this point, full chaos would have burst forth and the new plan would have been abandoned.

But the Mundane Many, fearful that they would lose all of their top students, rushed in to grab the early rejects of the Heavenly Seven. These Mundane Many acted under plans that were adopted in haste and with only one object in mind: to beat the opposition to the draw of top students.

After the scramble of the first two years of the new program, a number of the leading Mundane Many banded together and announced a plan for ac-

cepting qualified students on successful completion of junior high school, or ninth grade. After all, top students are usually top students all through elementary and secondary school. Of course, there was a provision in the contract of acceptance that called for continued outstanding work, but this was in very fine print and never discussed publicly. And the word "outstanding" was never defined, which gave great latitude to all institutions.

After two years of this plan the Heavenly Seven awoke with a start to find that most students would rather have a firm acceptance at the end of grade nine for a second-choice college than suffer three years of uncertainty for a first-choice college.

So these seven colleges held a heavenly conference and decided they could afford to accept with some "tiny type" provisions, extremely able students at the end of sixth grade. And they proceeded to do so. All they were really doing, of course, was eliminating duplicate applications, which would only have cluttered up the files of the Mundane Many.

All was not quiet on the men's college front. After watching this skirmish for a few years, they too rushed in to mimic the women's colleges. Their plans were continually disrupted, however, by one factor which was overlooked at first and was unsolvable when recognized. That was the inability to predict accurately the growth in males of height, weight, and speed. The first men's colleges to adopt early admission discovered to their embarrassment that their classes were well supplied with brains but woefully weak in brawn. Now, no college admits stu-

dents on athletic ability alone; we all know this, but colleges which have intercollegiate teams recognize the importance of "variety" in a class. No college wants all brains nor does any college want all brawn. A nice mixture, however, is truly democratic, wonderfully American, and what is more it gives members of a faculty a chance to taste the sweet rewards of teaching those who, at first, respond slowly. What profit or satisfaction can a teacher get from teaching only the "A" students? What satisfaction can a coach get from coaching All-Americans? Ask them sometime.

Star athletes identified at 10

Although the men's colleges were upset by their inability to select at ages 10 to 14 the athletic stars of 18, they did not give up. Ironically, the first serious research into the early identification of athletic ability was financed not by the big football plants but by the "let's keep it clean, boys" colleges.

The Ivy League and the Little Three obtained special funds for a research project entitled "Locating Talented Youth at Age 10." Though the title led many to believe that the search was for intellectual talent, and the names of the sponsors fostered this belief, actually the search was for athletic talent. The men's colleges used the results of the research conducted by the women's colleges on identification of brains. After all, as one Ivy president said, "there is no need to duplicate the splendid studies being made by and for the women's colleges. We are looking for qualities over and beyond the intellect, those qualities which add so much zest to a campus life, qualities which make a man whole and effective."

And this research project was successful. Without going into details, athletic ability proved to be more discoverable at age 10 than intellectual ability. One ironic twist came from the above-mentioned study by the "purity" leagues. Once the athletic lads were uncovered, they never enrolled at the "purity" colleges and universities. Can you guess what happened to them? Where they went to college? ... You are right.

Back to the Mundane Many, who, when we left them, were thoroughly shaken by their rivals' plan to accept



A nice mixture is truly democratic

at the end of the sixth grade. This was 1962. In 1963 the Mundane Many established a secret committee of psychologists to investigate the possibilities of acceptance at the end of kindergarten. This research was backed by a secret grant from a foundation which was especially excited about the prospect of identifying exceptional female scientists and engineers at age six.

This committee reported success in 1965 on both projects and the Mundane Many began to admit at the end of kindergarten.

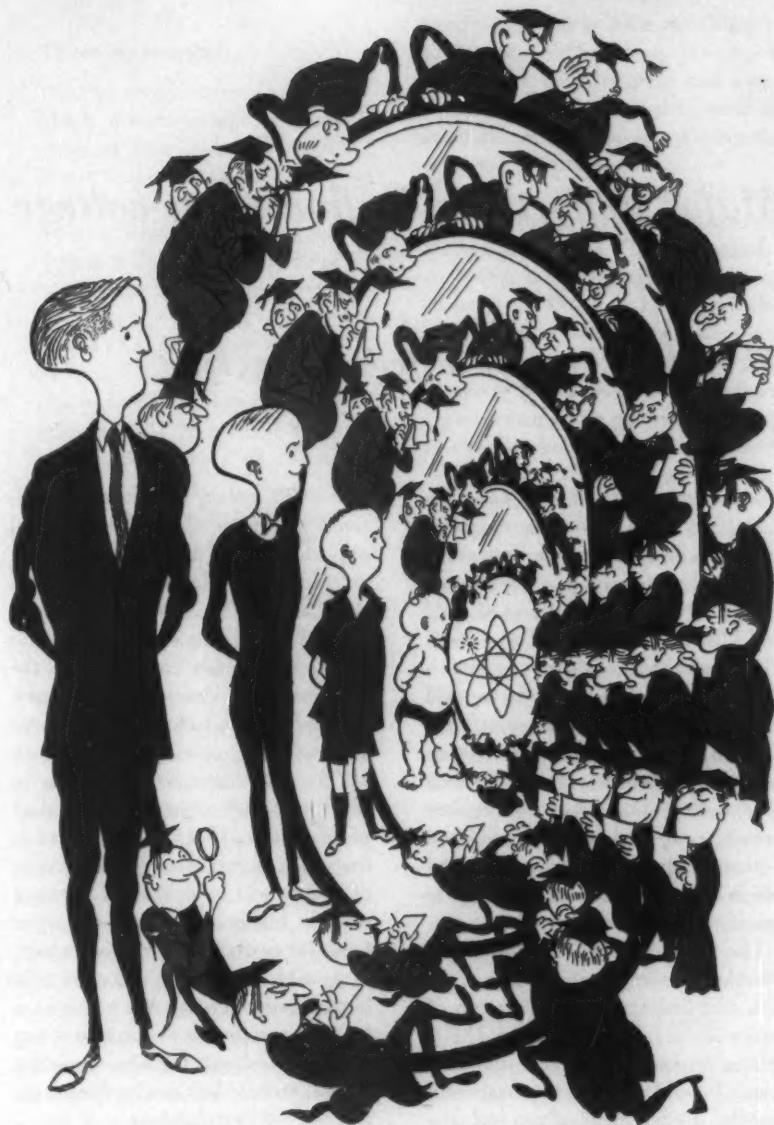
You might be interested in the test which was finally used to discover exceptional students at age six. After every psychological test of six-year-olds had failed, primarily because the research team could uncover no way to test for mathematical ability at an age when numbers are not a part of a child's life, one young psychologist suggested that they try a form of an ancient Chinese vocational choice test. In old China it was the custom to confront a child of three with several small objects which represented leading occupations, objects like a book, a trowel, a small boat, a plant, and so forth. Whichever object the child grasped first would indicate the occupation he should follow.

So, imitating this ancient Chinese test our psychologists placed before six-year-old girls the following objects: a flowering plant, a bible, a doll, a false face, a boy, a stack of silver dollars, and a slide rule.

As follow-up studies showed (and now I am taking you further into the future than 1968, but you know I know what happened) every single girl who, after surveying the objects, went unswervingly for the slide rule proved to have unusual ability in mathematics and the natural sciences.

It is now 1967 and the Mundane Many are admitting at the end of kindergarten. Most of you probably think our history ends here. But it doesn't. The Heavenly Seven are a proud and confident lot and tenacious as the proverbial bull dog. They are now backing secret and exhaustive research by a team of geneticists—financed by a second foundation—investigating the possibility of prenatal identification of talent. And preliminary research is "most promising!"

In simple terms, the key to the new



discoveries is a recently discovered gene which has been named the "orbiting gene." You know that genes are the hereditary factors or determiners located inside the chromosomes. You will remember, too, that each chromosome contains many genes arranged in linear order.

Now, the exciting thing about this new "orbiting gene" is that it does not stand in linear order...it is not paired, it stands alone and somewhat aloof from other genes. And because it stands alone and aloof and because it is so very, very tiny, it has escaped detection before.

It has been christened the "orbiting gene" because evidence indicates that

this gene controls what will happen to a student when he or she has been successfully launched and placed in orbit in the college atmosphere.

The power and influence of the gene can be identified only after special tests, which are not the objects of this paper, however. It is enough for you to know that soon after 1968 college admission will be shifted from offices and rooms on the college campus to the laboratories of our medical centers and that the admissions officers of the future will no longer be nice guys who have an unusual ability to give vague answers to direct questions, but doctors and geneticists with a thorough background in psychology.

Major departures in financing college

The breakthrough in federal backing

BY RALPH C. M. FLYNT

The enactment of the National Defense Education Act of 1958 in my judgment represents a breakthrough in the area of federal concern for education comparable only to the Ordinances of 1785 and 1787 and the Morrill Act of 1862. There have been, of course, other federal programs of assistance in the field of education such as the Vocational Education Act of 1917 and the two so-called GI bills. However, the National Defense Education Act of 1958 is more broadly conceived, and is based upon a thoroughly developed philosophy which has implications far beyond the specific terms of the Act.

The Congress went to considerable trouble to evolve the philosophy of the Act. The findings and declaration of policy found in Section 101 of Title 1 cannot be excelled by any summary which I could make of this basic philosophy. I quote the findings and declaration of policy in part:

"The Congress hereby finds and declares that the security of the Nation requires the fullest development of the mental resources and technical skills of its young men and women. The

present emergency demands that additional and more adequate educational opportunities be made available. The defense of this Nation depends upon the mastery of modern techniques developed from complex scientific principles. It depends as well upon the discovery and development of new principles, new techniques, and new knowledge.

"We must increase our efforts to identify and educate more of the talent of our Nation. This requires programs that will give assurance that no student of ability will be denied an opportunity for higher education because of financial need; will correct as rapidly as possible the existing imbalances in our educational programs which have led to an insufficient proportion of our population educated in science, mathematics, and modern foreign languages and trained in technology....

"To meet the present educational emergency requires additional effort at all levels of government. It is therefore the purpose of this Act to provide substantial assistance in various forms to individuals, and to States and their subdivisions, in order to insure trained manpower of sufficient quality and quantity to meet the national defense needs of the United States."

While all of the titles of the National Defense Education Act are certainly of interest to educators, I shall select only two of these titles for discussion: Title II—Loans to Students in Institutions of Higher Education, and Title V—Guidance, Counseling, and Testing; Identification and Encouragement of Able Students. These titles contain subject matter which are not only of significant professional concern but undoubt-

edly will involve school and college officers individually within their own institutions.

Title II, Loans to Students, was in final analysis evolved as a substitute for the original proposal of a national scholarship program presented to the Congress by the Office of Education of the Department of Health, Education, and Welfare. The loan program finally enacted authorizes appropriations for four years, respectively, of \$47,500,000, \$75,000,000, \$82,500,000 and



\$90,000,000. Under the terms of the Act the program will continue for an additional four years, the appropriations for which are left to the discretion of the Commissioner of Education.

The initial allotment among the states of annual appropriations under Title II is based on the relative number of persons enrolled full time in institutions of higher education in each state. Provision is made for reallocation of unused funds.

Administration of loan funds is to be the responsibility of higher institutions on the basis of agreements made with the Commissioner of Education.



Ralph C. M. Flynt is assistant commissioner, Legislative Services Branch, U. S. Office of Education, Department of Health, Education, and Welfare.

These agreements will be concerned with the establishment of a student loan fund based on a federal contribution and contributions of institutions equal to one-ninth of such federal contribution.

Loans to students shall be based upon need, and preference is to be given to students with superior academic background who desire to teach in elementary or secondary schools and to students whose academic background indicates superior capacity for or preparation in science, mathematics, engineering, or modern foreign languages. Students must be enrolled full time and must be in good academic standing. No student may borrow more than \$1,000 in any one year nor more than \$5,000 in the aggregate. Three per cent interest is to be charged on the unpaid balance beginning one year after the borrower ceases to pursue a full-time course of study and shall be completed within 11 years of such date. Waiver of interest and postponement of payment may be granted by the Commissioner of Education during prescribed periods of military service and during periods of attendance at higher institutions for further study.

Up to one-half of any loan plus interest is cancelled for service as a full-time teacher in a public elementary or secondary school at the rate of 10 per cent of the amount of the loan plus interest for each complete academic year of such service. Loans are to be cancelled upon death or permanent disability of the borrower.

Provision is made whereby the federal government can lend to the institution its share of the loan fund and further provision is made to reimburse the institution for its share of those loans which are cancelled on the basis of the borrower's service in the teaching profession.

Initial \$40,000,000 appropriated

It can be seen that the concept of the student loan fund established is somewhat complex. Financial need of the student is a precondition for any loan. Preference is given to students planning to teach or who show special abilities in certain areas and, finally, loans are partially rebated to those who enter the teaching profession. The administration of these provisions presents a

Three statements

The two accompanying articles, which discuss recent developments of great potential significance to the financing of a college education by students and parents, were presented as addresses at the annual meeting of the College Scholarship Service in October.

In a third address given at the meeting, Seymour E. Harris, chairman of the department of economics at Harvard University, contended that student loans should play a greatly expanded role in the financing of higher education. Dr. Harris' paper is scheduled for publication in the next issue of the *College Board Review*.

serious challenge to the administrators of programs of student financial assistance in institutions of higher education. These challenges, I am sure, deserve more extended discussion than I can offer here.

The Eighty-fifth Congress, Second Session, enacted the National Defense Education Act on the final day of its concluding session. It was therefore not possible for the appropriations committees of the House and Senate to conduct the necessary hearings which would have enabled them to provide the Office of Education with the first annual appropriation of \$47,500,000 required. Through the heroic efforts of a number of Congressional leaders, however, the Congress did appropriate a lump sum of 40 million dollars to serve as an initial appropriation. It is, of course, expected that the Office of Education will present to the Congress in January, as part of the first major deficiency appropriation, a request for a supplemental sum which will round out the annual appropriation for the first year.

Six million dollars of the initial 40 million have been allotted to Title II, Loans to Students. In the preparation of plans for the development of student loan programs we have suggested to higher institutions that they plan on the basis of the full annual appropria-

tion. Unless this is done, the Office of Education will be in no position to suggest to the Congress the exact amount of money needed to meet all institutional requirements during the first year of operation.

I must confess that the size and scope of the program envisioned by the Congress under Title II has had a somewhat sobering impact upon those of us in the Office of Education who are concerned with the legislation and its future administration. The Congress sincerely feels that loans to students represent a suitable and feasible means of enabling large numbers of students to enter and remain in college who would otherwise be unable to do so, and that the enactment of this title represents a major breakthrough fully compatible with the philosophy expressed in the Act to which I previously referred.

The two responsible Congressional Committees gave very careful study to the present status of loan funds in higher institutions. They were well aware of the limited utilization which hitherto has been made of loan funds but expect that the size, scope, and liberality of terms embodied in the program which has been enacted will create a basis for a major breakthrough.

Number of loans must double

Precisely how great and significant this breakthrough must be is, I am sure, only too readily envisioned by college scholarship officers. In order to accomplish results commensurate with the expectations of the Congress, it will be necessary for the following to be brought about:

1. Approximately twice the number of institutions now administering loans will need to establish loan funds under the provisions of the Act. Slightly more than 700 now administer such funds.

2. Approximately twice the number of students now borrowing from loan funds must become borrowers. Approximately 80,000 students now have loans outstanding.

3. Students must borrow on the average of three times as much as they are now borrowing. The national average is now approximately \$188 per student. It will be necessary for the aver-

age loan under Title II to be about \$600.

The greatest challenge which we face in the administration of Title II of the National Defense Education Act is concerned, in my judgment, with the sheer problem of local administration. In large numbers of higher institutions, systems for determining the need and fiscal integrity of individuals based on experience are either lacking or exist only in rudimentary form.

The Office of Education had experience during World War II with the administration of a federal loan program in approximately 300 institutions. I can say from personal knowledge that the problems which I have outlined existed at that time and continue to exist very widely. I urge the colleges participating in the College Scholarship Service to concern themselves with these problems. I am sure that the experience which CSS participants have amassed will be a resource of incalculable value to us as we go forward in the development of the program. I invite them to suggest ways and means whereby we can provide leadership to higher institutions throughout the country in establishing the most effective administration of the program and I hope that we can look to them as a principal resource. Without the proven experience of the College Scholarship Service in working out a means of measuring the financial need of individual students, I doubt very seriously that the Office of Education and the two Congressional committees which developed the National Defense Education Act of 1958 would have been able to convince the Congress that a means test is feasible.

To find and guide the talented

Title V of the National Defense Education Act provides for a program of testing students in public and private secondary schools for the purpose of identifying those with outstanding aptitudes and abilities. It also provides for a program of guidance and counseling in the public secondary schools in which students will be advised of courses of study best suited to their abilities, aptitudes, and skills, and in which students with outstanding aptitudes and abilities will be encouraged to complete their secondary school education and to prepare for and enter institutions of higher education (and,



perhaps the Congress would wish to add, pursue successfully a course therein).

The program authorized under Title V will be carried out through state plans submitted by the several states and authorizes the use of appropriated funds for state leadership and for the development of testing and counseling services.

A second section of Title V provides for a system of counseling and guidance training institutes to be established in higher institutions. These institutes, which are to be of a short-term or regular-session character, are intended to provide training to improve the qualifications of personnel engaged in the counseling and guidance of students in secondary schools or of teachers in such schools preparing to engage in counseling and guidance.

The inclusion of Title V in the National Defense Education Act is, in my judgment, of the highest significance. My own assessment of the importance of the proposed program of counseling, testing, and guidance is based on the firm belief that we need more, not less, quality control in education; that we need means of validating individual choices made in the free elective system in our secondary schools and in our higher institutions (with a freedom of choice which I do not believe the American people are willing to abandon); and that we need to identify and encourage students of highest ability

who are not now achieving optimum performance on the basis of their capabilities.

The Congress has authorized an appropriation of 15 million dollars annually for four years for the state programs to which I have referred, plus \$6,250,000 for the counseling and guidance training institutes in the first year of operation, with \$7,250,000 for each of the three succeeding years. An initial appropriation of \$5,400,000 has been secured for state programs and \$2,000,000 for the training institutes. In view of the fact that the states are not required to match the sums allotted to them during the first year, we are quite hopeful that Congress will be sympathetic to filling out this appropriation to the maximum during the first year.

I do not need to concede that full acceptance of programs of testing, counseling, and guidance has not yet been fully achieved even within the educational profession. The persistence of the concept embodied in Title V through long and tedious Congressional hearings and floor consideration is a tribute to the earnest efforts of leaders in the field and to lay persons who have experienced the effectiveness of comparable programs in business and industry.

We in the Office of Education have only a brief period within which to make good. I know that all educators share our concern that we do not fall short of the expectations held by Congress in enacting the program described above.

This brief analysis by no means exhausts all the challenges and problems which arise from full consideration of the impact of these significant titles which form a part of the National Defense Education Act. I shall draw attention to only a few more such problems. I believe we must give serious consideration, first, to the impact of a large-scale program of loans to students upon the tuition and fee structure of higher institutions; second, to the effect of a program of loans upon the financing of the education of women students; third, to the implications for curriculum planning and development brought about by the acquisition of a much larger amount of testing data; and fourth, to an estimate of the effect of a program of identifica-

tion of able students, and of readily available loans, on the college-going of bright high school graduates. I sincerely hope that the member colleges of the College Scholarship Service will address themselves to all these problems in the months and years to come. Those of us concerned with the programs in the Department of Health, Education, and Welfare will look to the CSS to establish significant findings in these areas.

Federal scholarships uncertain

With respect to the future plans of the federal government in the area of student financial assistance, I can provide no definite statement at this time. We have not yet decided whether or not we will request the Congress at the next session to enact a national scholarship program such as we requested in the last Congress. We are naturally most concerned at this time with establishing an effective administration of the programs already enacted, which will tax our resources to the limit. The

answers to many of the questions I have raised here will no doubt assist us in establishing the direction we will take in the future.

However, it should be recalled that the Congress has devolved upon the Secretary of Health, Education, and Welfare certain responsibilities with regard to the total program of student financial assistance in the federal government. The text of Section 1001 (d) states that:

"The Secretary shall advise and consult with the heads of departments and agencies of the federal government responsible for the administration of scholarship, fellowship, or other educational programs with a view to securing full information concerning all specialized scholarship, fellowship, or other educational programs administered by or under any such department or agency and to developing policies and procedures which will strengthen the educational programs and objectives of the institutions of higher education utilized for such purposes by any such department or agency."

This responsibility is being taken very seriously within our Department and within the Office of Education. We are in the process of establishing a staff service to carry out this function. I am sure that it will concern itself with a wide variety of problems which are faced throughout the government. Moreover, the Congress expects that we shall in due course come forward with findings and recommendations in these areas.

Our future course of action must undoubtedly be guided by our experience with the program we are now charged with administering. It will obviously be under close observation by the Congress, by the educational profession, and by the lay public. I am certain that while we shall provide effective leadership and administration for the program, the solutions to the problems raised by its operation cannot all be gathered by ourselves. We shall have to depend upon members of the CSS and other groups in higher education to help us assess its impact and effectiveness.

Charging the full cost of education

BY WILLIAM C. FELS

One passage in the recent Rockefeller Report on education expresses concern for the continued influence of privately financed institutions unless the question of how to finance them can be answered. The statement goes on to say:

"Some have urged that one solution of the problem lies in reform of the *pricing system* of the privately financed college....tuition would be set at the *full cost of instruction* and each student would receive whatever amount of scholarship or other financial assistance he needed and would pay whatever proportion of the full tuition he could afford....But many people disagree, basically and philosophically, with such a policy and find fundamental difficulties in it. One difficulty is that it might put the privately-financed institution at a severe disadvantage in attracting students as compared with the publicly-financed institutions. An-

other is that such a plan would require that a large proportion of the student body be subjected to a *means test*, which would be very difficult in administrative terms."¹

The statement concludes that the solution for the privately-financed institution lies in exploring numerous ways to cut costs and to raise money, not in any one device.

I would not challenge the Report's conclusion that our salvation requires many saviors, but I would say that what we are doing at Bennington "rather successfully" challenges the many people who, according to the Report, disagree with and find difficulties in a reform of the price system.

What are we doing at Bennington?

Last February the College introduced a new plan for determining tuition and other student fees effective with the academic year starting in September 1958. The plan closely resembled one used by Bennington in its early years.

The charge for tuition, room, board, and health services was increased \$400 to the full cost, \$2,650. Of the \$2,650, tuition accounted for \$1,600; room, board, and health services, \$1,050.

However, the plan encompassed a provision for adjusting fees to family



Reason and self-interest are on its side

¹ *The Pursuit of Excellence; Education and the Future of America* (Special Studies Project Report V, Rockefeller Brothers Fund), (Garden City: Doubleday & Co., Inc., 1958), pp. 37-38.

resources. Students whose families are able to pay the full fee are expected to do so. For those unable to pay the full tuition fee of \$1,600, this charge is scaled to the family's financial resources. The \$1,050 fee for room, board, and health services remains fixed, however. This is a floor below which we do not go. Thus total charges range downward from \$2,650 to \$1,050. Arrangements are available to pay the charges on a monthly basis covering the academic or the calendar year. In addition, families who wish to spread the cost of education over more than four years may request loans. The loans are offered without interest while the student attends Bennington. Interest at 3 per cent is charged starting when the student leaves college.

One of the difficulties we encountered before embarking on the plan was finding an accepted method of computing the cost of education. We wanted a formula that had the support of authority. In the end we used one recommended by the National Federation Consulting Service, a nonprofit agency established by the National Federation of College and University Business Officers Associations. What more authoritative formula could one have?

The formula is conservative and favorable from the parents' point of view. It is: total operating expenses, less offsetting items of income derived from sources other than student fees and endowments, divided by the number of students.

Families paying the full \$2,650, or paying the previous total of \$2,250 and accepting loans for the balance were not asked to file financial forms.



William C. Fels, president of Bennington College, was formerly associate provost of Columbia University. He served as Associate Director of the College Board from 1952 to 1956.

Parents requesting reduced tuition were required to fill out and file the Parents' Confidential Statement form of the College Scholarship Service.

The CSS provided us with special charts for computing high-income cases. In these and regular cases we followed CSS computation procedures exactly, so that our results could be made meaningful to other colleges.

Two features of the plan remain to be specially noted. It applies to all applicants and students; at Bennington no distinction is made between scholarship and regular applicants or students. And second, under the plan, no full-paying parent bears any part of the cost of any part-paying student; the difference between the amount paid by students whose tuition is reduced and the full cost of their education is made up from gifts.

How well did this plan work? It is too early to give a final answer, but so far we are pleased. We plan to make a detailed report with facts and figures at the end of this year, but here are our tentative and general conclusions.

The Rockefeller Report said that "one difficulty" of such a plan is that it

"would require...a large proportion of the student body to be subjected to a means test, which would be very difficult in administrative terms." Actually, the services of CSS made the administration of a means test as simple as it is in the ordinary scholarship operation.

It was not the *administration* of the means test we were worried about; it was the reaction of parents in the upper-middle income group—those who might be, in the words of the Rockefeller Report, "basically and philosophically" opposed to the plan. We were happy, and relieved, to find that the reaction was almost uniformly favorable. I don't mean that parents were delighted to pay an extra \$400. They were not. But no one claimed the plan was unfair and no one rebelled against it. It is hard to be "basically and philosophically" against paying one's own share of the cost of something. One can rebel against paying someone else's share, but we were careful not to ask anyone to do this.

Income, enrollment drops risked

We had several other things to worry about. The new plan might cause a greater number of withdrawals than usual; the size of the freshman class might be affected adversely since we were determined not to sacrifice quality; and if enrollment dropped there might be a serious reduction in income. Income was also endangered by the possibility that the CSS formula would find many currently full-paying parents entitled to the reduced tuition they would now be invited to apply for.

There was no way to test the first two possibilities, but an advance poll of parents suggested that we would not be overwhelmed with new reduced-tuition applications from our present students, and in the end we were not.

As it turned out, withdrawals from the college for all causes declined 5 per cent. I doubt that this improvement has any significance except perhaps to show that the upper classes were not adversely affected by the introduction of the plan.

On the other hand, we enrolled seven fewer new students than the previous year. We have no way of knowing whether this was caused by the introduction of the new plan. I am inclined to think other factors were more im-



What are we doing at Bennington?



A floor below which we do not go

portant. The number of applications was below the previous year's before the plan was announced in February. We had no more than the usual attrition from tenders of admission to acceptances. Had we had a few more qualified applicants, we would have filled all places, as we hope to this year.

The quality of the freshman class, however, improved slightly. By such readily available measures as verbal and mathematical scores on the College Board Scholastic Aptitude Test, the class is somewhat better than the previous year's. In geographical and school distribution, and in academic preparation, the two classes do not differ significantly. We are making a study of the socio-economic characteristics of the freshman and sophomore classes, but our impression is that the two classes do not differ in these respects either.

Loans were accepted in substantial number and amounts for the first time.

The proportion of our students on what we call reduced tuitions and what other colleges call scholarships is now about one-third. The reductions or scholarships average just over \$1,000.

Even though the college opened with seven fewer new students than we could have accommodated, our operating income was increased markedly, sufficiently to enable us to raise faculty and staff salaries, to speed our maintenance schedules, and to purchase needed equipment.

As I said earlier, it seems to me that our experience challenges those who disagree with and find difficulties in a reform of the price system. The only philosophical problem I know of that

remains unanswered is whether it is right to charge people according to their ability to pay after they have been taxed by the government on the same basis. To this I can only answer that we teachers have at long last been forced by necessity to adopt a custom long followed by our prosperous fellow-professionals, the doctors and the lawyers. If the practice is ethical enough for them, it's ethical enough for me.

The difficulty cited by the Rockefeller Report that "such a plan might put the privately financed institutions at a severe disadvantage in attracting students as compared with the publicly financed institutions" does not seem to me to be inherent in the plan. The same result would come from increasing tuition, and this the privately-financed college must do if it is to compete for teachers with the publicly-financed institutions. The Bennington-type plan seems to me to be preferable in that it at least returns more income, which can be used to attract good teachers, who in turn will attract good students.

From the beginning of the College Scholarship Service, it has seemed to me inevitable that most colleges and universities, including publicly-supported institutions, would in the end adopt such a plan as Bennington's. Reason and self-interest are both on its side. In some cases, the change will be

made soon and all at once. More often there will be a steady rise in stated tuitions accompanied by a rise in the number of scholarships adjusted according to need.

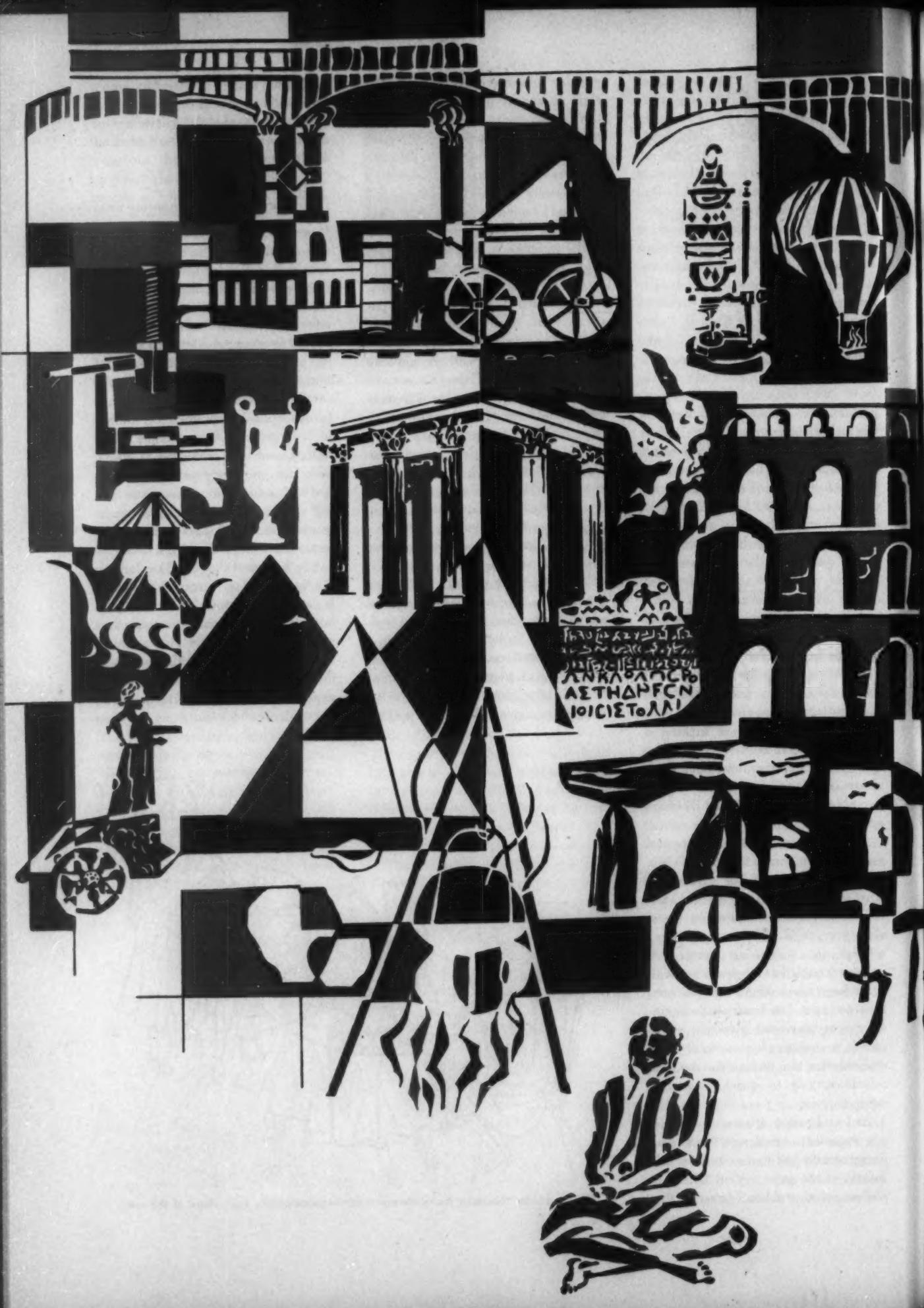
Charge students for computing need

If a very large number and proportion of students are to use the College Scholarship Service, as they now use College Board tests, then it is important for the Service to develop through research a central computation procedure as accurate as the Board's testing procedure, and to shift the cost of the computation from the college to the candidate. I think the recent tendency to de-emphasize central computation in order to save the candidate a few dollars paid once in his life is a mistake. If the tendency continues we will end with a situation analogous to having a College Board testing program in which every college corrects its own papers and assigns its own scores.

The success of the Board has lain, as the late Nicholas Murray Butler knew it would, in the provision of a comprehensive entrance testing program at no charge to the colleges and at small charge to the candidate. The success of the College Scholarship Service will depend on its adherence to the same principle.



It's hard to be "basically and philosophically" against paying one's share of the cost



Needed: special climate, slower pace for superior students

The philosophers of history are fond of distinguishing between "culture" and "civilization" meaning by "culture" the small originative and productive social unit, and by "civilization" the large social organization. Cultures, so to speak, produce culture out of all proportion to their size; whereas civilizations spread culture but do not produce it.

The archetype for this distinction is, of course, Greece and Rome. Greece was extraordinarily productive, while Rome produced very little beyond law, good roads, and cement. Most of the arts of Rome are poor imitations of the arts of Greece, and there are no Roman philosophers at all. Translations and imitations abound.

It has been pointed out that a comparison can be made with our own times. European culture has given rise to two civilizations, those of the United States and of Soviet Russia. And there are parallels in many other ways. Europe, like Greece, has produced its geniuses; the United States and Soviet Russia, like Rome, have undertaken the spread of European culture. As is usual in the transition from culture to civilization, the emphasis has shifted from theoretical concerns to matters of the most immediate usefulness. Not science but applied science and technology, not works of the highest literary genius, but the greatest number of English professors, not new political ideas but the widest spread of economic benefits to the masses (and in the case of the United States, of political benefits as well).

In education we see the same forces at work: not education of a high quality but education of a tremendous quantity, more young people educated yet few if any receiving an education of the highest type. The situation is a logical consequence of the type of civilization in which it occurs. In the

United States, practical issues are respected and applied science pursued, but the dependence of these on theoretical issues and pure science is not well understood. The anti-intellectual and isolationist trends persist even though the conditions which produced them no longer prevail. We no longer have the pioneers' work to do: the forest has been cut down and our cities are built. We no longer can enjoy the security of separation from the rest of the world since the invention of the airplane and—worse still—the guided missile. We shall have to abandon these attitudes as no longer realistic; we need to take our place in the world and acknowledge the leadership of the productive intellectual.

But we cannot any longer depend upon imports for this commodity. Europe is tired after its wars, economically insolvent and energetically bankrupt, no longer independent of the giants between which it finds itself



caught. We shall have to develop our own scientists—yes, and our own artists—if these are to exist in our country. Our very survival may depend upon them. How are we to do this in a way which shall enable us to excel and to maintain our leadership in the world?

There are obstacles to the achievement of such a goal. The anti-intellectual philosophy, and the mass half-education that goes along with it, stand in the way. The rational and the theo-

retical, to say nothing of the artistic, are very much derided in favor of the practical. Our universities reflect this by becoming trade schools in which technology and applied science are more important than pure science.

The mass half-education produced by our instructional industry has a curious result. We educate our citizens away from the cultivation of their senses, so that they no longer have the ability to perceive which was their natural gift as children and which is the professional equipment of farmers and fishermen. Yet we do not educate them up to the skillful manipulation—and discovery—of abstract structures, such as those of mathematics and philosophy. The result is that they fall between these two able extremes and plunge into a world of formulas, advertising slogans, manufactured fiction, and conventional customs. They no longer are able to judge anything for themselves and they seek comfort and protection in conformity—what the British sociologists have called the ad-mass. Now the ad-mass is a large mass and calls for manipulation. Hence the great need for administrators and institutional men generally. In a word, our universities are run like business corporations and run so well that they do not produce the desired effects at all.

We shall have to alter these methods and their results if we are to produce leaders. But leadership of the desired sort does not consist merely nor primarily in having the right kind of political or institutional administrators. Like all civilizations, ours does this sort of thing very well. But so did Rome; there is little doubt that Rome far surpassed Greece at the business of social organization. What it could not do was to produce artists and scientists. With certain rare exceptions we have not done so, either. Have we a physicist of the class of Planck and Einstein,

a psychologist of the class of Pavlov and Freud, a biologist of the class of Pasteur, a mathematician of the class of Gauss? If, for instance, one were to name the greatest novelists of recent decades, the list would have to include Gorky, Proust, and Joyce. Have we a name that could be added to this list? We have excellent writers: Hemingway, Caldwell, Steinbeck, Faulkner. Yet not one of these has produced work of the level of the Europeans.

The problem becomes that of learning how to produce producers. Our colleges are already excellently organized for the mass production of college degrees for which they were designed. But we are not so well prepared to produce educated men who can themselves produce original science and art. The society which functions so efficiently is actually an obstacle to the kind of quality production we now wish to add to it. The stretch-out system will make Buicks faster but it will not make Rolls-Royces at any rate, fast or slow.

If we are to produce producers, if we are not to waste talents, then what we need in education is not a stretch-out system but a slow-down system. Doing a quality job does not consist in doing a quantity job faster. Quality in education has the dimension of depth, whereas quantity is a surface measurement. Quantity means: how much have you memorized, how many formulas have you learned to call on, how many techniques have you mastered? Quality means: how deeply do you understand, how excellent is your knowledge, to what depths of penetration does your comprehension reach? Not how many credits do you have or even what grade average did you maintain but how fully do you comprehend what you have learned, how thoroughly are you able to think for yourself?



James K. Feibleman is professor of philosophy and chairman of the department in the College of Arts and Sciences, Tulane University.



We need to ask our superior students to do what other students are doing but to do these same things a lot slower. We want them to think, we want the ideas to be assimilated. We want these men and women to germinate—and eventually to produce. Such results are not obtained by speeding up a mass production system nor by passing the superior students along the belt-line a little more quickly than the others. To state more concretely what such a program would mean is to defeat it at the very beginning. In the interest of origination, an atmosphere would have to be brought into existence in which it would occasion no surprise. Only the kind of men who understand what this means are capable of engendering it.

If we are not careful with our superior students, they will turn into average professors, that is to say, they will hand on to successive generations what has been handed down to them from the past. In lieu of a contribution of their own, which is allegedly required of them in the present system of higher education in the United States, they will crank out the usual number of journal articles, complete with assorted footnotes, that passes for scholarship. Scholarship *sui generis* is not origination. What we need in order to gain and maintain world leadership in all fields is original production. There is such a thing as original scholarship, but it is never at the level of original production. Gilbert Murray's study of *Aeschylus* is a magnificent performance, but even so it is not at the level of *Aeschylus*. The disease of the second-rate scholar consists in supposing that the existence of *Aeschylus* can be justified only as the basis for such a study. To be second-rate, one does not strive to be first-rate and fail; instead one deliberately strives to be second-rate and succeeds. The principles of

second-ratedness are twofold: never be the first to do anything, and never do anything as well as it can be done. In short, the principles call for the failure of originality as well as the absence of excellence.

To guide superior students we need a superior faculty. To produce both, we need leisure. Nothing as profound as the production of original work in the arts and sciences was ever done in a hurry. Nature is everywhere dense and, as Heraclitus said, likes to hide. To discover what has not yet been disclosed requires knowledge, of course, but also a withdrawal and an invited contemplation. What is needed is an atmosphere of freedom in an institution devoted to transparent facilitation where the superior student can humbly pursue his studies at his own pace.

To develop artists and scientists, we shall have to cultivate the kind of attitude and interest which cannot at the present time be measured by intelligence or aptitude tests, punched on cards, or encoded. We ought, perhaps, to give up in this connection the ideal of the well-rounded man, the institutional man, and substitute the man of straight-line accomplishment. By mass-production methods it is possible to get only mass-production results. Individuals who are dealt with in terms of statistics will behave like statistics. It is time to remind ourselves that history remembers few administrators. To produce superior students, we must plan in superior ways, and these are more often indirect than direct. The talents of the superior student can only be encouraged, they cannot be compelled or disciplined. And this requires a comprehension of what is involved that surpasses in subtlety and complexity the methods recently introduced and presently employed.

What is at stake is nothing less than our safety as a nation. We cannot hope to excel in the competition with Soviet Russia by working with ideas identical with those they are using. We shall have to learn how to invest in the ideals of the future as much as we are willing to contribute to the exigencies of the present. And this means, in the case of education, building into the superior student the qualities which will make him capable of advancing the culture while others do the work of maintaining it.

Varying curricular patterns for able college students

In American colleges as a whole a large number of able undergraduates are not working up to capacity, indeed are dropping out prematurely, because they have not been sufficiently stimulated to complete a college education.

Less than 40 per cent of those who enter college graduate in four years and probably no more than 60 per cent of all who enter college ever graduate.¹ Of course, some cannot continue in college because of inherent inability and others cannot because of financial reasons, but many who can do college work and who can afford college expenses drop out simply because they do not find their course of study sufficiently challenging and rewarding. On many campuses the gifted student is given less attention, and gets less for his money, than the marginal student.

Part of the trouble results from a misreading of the democratic credo. As college-going has spread through all social and economic strata, a bachelor's degree has become in the eyes of most persons part of the birthright of the American adolescent, along with an old car and a Saturday night date. Since almost everyone wants to go to college, it is claimed that everyone must be allowed to go. There is thus considerable pressure on educators to plan courses of study most persons can pass. If the bright boy finds it too easy, that is considered—mistakenly—to be his good luck.

Fortunately, colleges in small but increasing numbers are becoming aware of the needs of their superior students and are taking steps to encourage them to develop their abilities to the fullest. Faculty interest in curriculum improvement and concern for able stu-

dents are mounting. Committees on the gifted are being formed; individual instructors are being urged to modify their teaching in order to stimulate their top students. Budgetary provisions are being made to furnish special class sections, honors programs, and guidance for gifted or bright boys and girls.

Benefits college, faculty, students

Some institutions have already made their curricula more flexible so that students of high-level ability may get more than the minimum out of their four years in college. By curricular flexibility of this kind, I mean the provision of special programs or means for changing regular courses of study for the unusually able. The principal ways in which colleges are providing curricular flexibility for the able are through granting advanced placement or credit for work done in secondary school, granting early admission to students before they complete secondary school, offering a wide variety of options for independent study, including tutorial plans, and offering similarly varied honors programs.

Curricular flexibility of this kind has many advantages as an educational ideal. Its existence benefits the institution, the faculty, and the student body. The college gains in that flexibility serves to prevent stagnation. No matter how good, any course of study which does not change with changing conditions eventually becomes obsolete. Any policy or degree requirement which is not subject to at least the possibility of modification eventually becomes a "sacred cow," revered perhaps for reasons less than rational.

More important, curricular flexibility has advantages for the faculty. Persons in institutions of higher learning face several occupational hazards, one

of the most serious of which is a certain stodginess that comes with time and with constant reinforcement of one's conviction in the soundness of his own opinions and procedures.

There are many advantages for undergraduates in curricular flexibility, although it must be admitted that the majority of students fail to benefit from it. The standard program of study which has evolved over the years in scores of colleges and universities may be the ideal one for most students. A standard curriculum, however, assumes that all students taking it are about the same in ability, aptitudes, interests, and direction. It is a truism that the cloth should be cut to fit the man; curricular flexibility enables a gifted student to move ahead just as far and as fast as he can go.

Curricular flexibility for the able is also desirable in view of the undergraduate temper of today. The adolescent in modern society seems to have lost much of the old zest for learning which characterized college populations in other times. David Riesman and others have pointed to this phenomenon, a loss of the tradition of love of work and respect for learning.

Growing up in a materialistic America which has played at intellectual-



Charles C. Cole, Jr.,
dean and professor of history at Lafayette College, recently conducted a study for the Carnegie Corporation on what special provisions a number of colleges are making for their superior students.

¹ U. S. Department of Health, Education, and Welfare, Office of Education, *Retention and Withdrawal of College Students*, Bulletin 1958, No. 1 (Washington, D.C., 1958), p. 16.

baiting for a full decade and embued with a voracious vocationalism, today's college students apparently need additional prodding if they are to work harder, dig deeper, study longer. If those with the talents to become leaders in our society do not develop those talents they are bound to be poor leaders. If they lack motivation to learn, their colleges must attempt to make up for that deficiency by encouraging them to accept additional work and special courses so that the excellence of their education can match the excellence of their capabilities.

It must be recognized that there is as much danger in excessive flexibility as in an inflexible curriculum. Ideal flexibility is not realized through a totally free elective system. It is not achieved by complete permissiveness, nor by shaping the curriculum to the whims of the student body, the alumni, or the public. It is not gained by weakening the liberal arts.

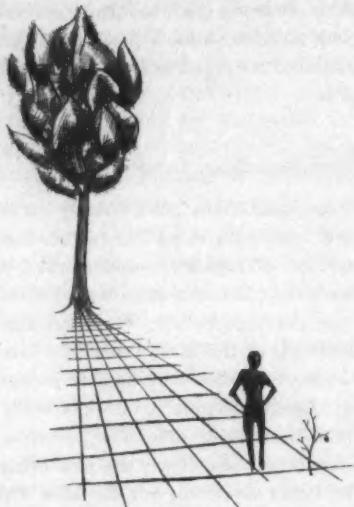
Institutions have long been too acquiescent in catering to the demands of this course or that, this special program, that special device. We cannot expect that all adolescents know their own capabilities or what is best for them, and it is irresponsible to allow those outside educational circles to dictate the content of the curriculum.

One of the most promising examples of flexibility in American colleges is the Advanced Placement Program of the College Entrance Examination Board, in which an increasing number of schools and colleges are cooperating. For some time, many colleges have followed a policy of placing students in advanced levels of courses appropriate to their prior experience, but the practice of awarding college credit for college-level work done in high school is a relatively new method of eliminating duplication between high school and college and encouraging better teaching in the secondary school.

In some colleges, freshmen who score high enough on the Advanced Placement Examinations are placed in sophomore courses but are given no academic credit. In other cases, a few points of credit are awarded, and in a small number of colleges it is possible for qualified students to receive sophomore status as a result of their high school work.

The credit aspect of advanced placement, however, is not its most significant feature. The avoidance of overlapping or duplication in studies, the recognition of superior performance on the part of the student and of superior teaching on the part of the secondary school teacher, the encouragement extended to the collegian by placing him in an advanced course—these are the strengths of the advanced placement plan.

A few years ago the practice of admitting able students to college before they completed secondary school appeared to be the most promising type



of flexibility being tried in the colleges. Aided by grants from the Fund for the Advancement of Education, some 11 institutions pioneered in conducting an "early admission" experiment to ascertain whether tenth and eleventh-grade students could succeed in college.

Although these institutions still accept some early admission students, and although a few other colleges have modified their traditional school graduation requirement for admission, in 1958 there is little disposition in institutions of higher learning to expand the early admission idea or recruit eleventh-grade students for college. From the point of view of both schools and colleges the advanced placement approach appears to be much more attractive than early admission as a flexibility device.

Another of the most productive approaches to flexibility currently being tried on college campuses is independ-

ent study. In study of this kind, the student pursues his reading or laboratory experimentation in a given area more or less on his own and presents in most instances only a final report on his work. Among colleges there are many types of independent study arrangements, some of which affect only a portion of the student body, others of which apply to the entire group.

In the last year or so, interest in independent study has increased considerably, partly as a result of increased administrative concern over the problem of utilization of resources, partly as a result of increased faculty attention to the implications of expanding enrollments.²

There is a strong feeling on some campuses that there is no such thing as independent study, that such programs should be called dependent study since they require the assistance, advice, and cooperation of a faculty member. There is also some suspicion that independent study is a fad, made attractive in these days of rising enrollments as an easy solution to the problem of bulging classrooms and probable teacher shortages.

Other critics contend that most students are not mature enough to take advantage of the opportunities of independent study and that nothing can really take the place of the good old lecture on Mondays, Wednesdays, and Fridays at the appointed hour. Those who hold this point of view take the position that the undergraduate should be in the classroom rather than the library, that he should be listening to a lecture instead of reading and writing on his own, that the important function of the college teacher is to stimulate young minds and not to serve as an encyclopedia or an editor of ill-considered, hastily written adolescent prose.

The critics of independent study tend to overlook the deficiencies of the traditional lecture system and to minimize the capabilities of a portion of the undergraduate student body. Independent study is as old as colonial times, and today approximately one-

²The best survey of independent study is Robert H. Bonthius, F. James Davis, and J. Garber Drushal, *The Independent Study Programs in the United States*, (New York: Columbia University Press, 1957).

quarter of the four-year colleges and universities have some type of independent study plan.³

One curricular variation outside the traditional formal course requirement which is closely related to independent study is the tutorial plan. A number of institutions have adopted this to advantage. In a tutorial arrangement the student does considerable reading and writing on his own but under the fairly close supervision of a faculty member. The consultation between student and teacher on an individual basis is considered very valuable by those institutions which have adopted tutorials. Although they are not as extensive as those practiced in England, tutorial plans in American institutions provide a tailor-made type of higher education for the serious-minded, well-motivated student.

There is one troublesome aspect of the tutorial system which must be considered. When an institution relegates the bulk of the tutoring to junior staff members and graduate students, it is susceptible to the charge that it is shortchanging its students and exploiting its younger staff.

To be most effective, good tutoring demands considerable attention and is more time-consuming than might be expected. Yet it is not clear to what extent professional recognition is or can be given for capable tutoring work. In the final analysis, tutoring is a private operation which is not likely to receive recognition as quickly as outstanding lecturing.

Of all the arrangements used to build greater flexibility into the curriculum for able students, honors programs appear to be the most productive. Honors programs most often consist of series of special courses or special sections within courses that require more work and work of better quality than regular courses or sections. Honors work is viewed by many as excellent for the able student regardless of his vocational objectives or field of specialization. Honors programs are also quite popular. Even in public institutions there appears to be an increased interest in operating special programs of study that lead to the bachelor's degree with honors.

The development of an esprit de

corps among able students is important to any honors program. One of the factors contributing to the achievement of the first group of early admission students, for instance, was the sense of their uniqueness which the group developed.

It is also important that faculty members and administrators meet the students more than half way, that they get involved in the program and pay it more than lip service. The encouragement of the classroom teacher is still the most important ingredient in the success of special plans for the exceptional student.

It should be noted that some students with hearty intellectual appetites prefer to undertake abnormally heavy programs rather than honors courses or independent study. Among institutions generally, however, abnormally heavy programs of regular study are discouraged. This is particularly true when the student wants to accelerate, or complete his degree requirements in less than four years; acceleration is usually condoned despite or as an exception to the college's educational philosophy.

Although credit by examination and unusually heavy programs do enable an occasional bright, eager undergraduate to get his degree more quickly, they are far more commonly regarded as opportunities to enrich rather than to shorten one's college experience. Few students are in fact graduating in less than four years today.

Crucial role of teacher

As might be expected, more in the way of flexibility in special course offerings is found in senior-year curricula than in the offerings for earlier undergraduate years. Seniors are more mature, and those among them who could profit from special courses or programs are more easily identified. Moreover, independent study or honors programs appear more logically as a culminating experience in the four years of study.

Little has been said thus far about the crucial role which the individual teacher plays in providing flexibility in the curriculum. Where classes are small, the instructor can frequently put the level of work as high as the abilities of the students warrant. In a small

class the instructor is more easily able to gauge the effectiveness of his presentation than in a large lecture class.

Teaching by a discussion method enables the instructor to move a class ahead as rapidly as it is able to go, to take the students into a subject as far as they are ready to be taken. In the long run, a small class discussion in the hands of a capable teacher is probably the most productive yet most elusive type of flexibility obtainable.

In the final analysis, flexibility depends much more on the willingness and interest of the faculty than on formal requirements and procedures. Indeed, if the atmosphere of the campus and the quality of instruction and of the student body do not motivate either the faculty or the students, little is likely to be accomplished by artificial means.

Despite the manifest shortcomings of higher education today, and despite the fact that many students are not developing to their fullest intellectual capacities, there is a sense of ferment on many college campuses. There are promising experiments being tried; there are fascinating ideas being expressed. Educators are wrestling with the problem of curricular improvement; they are seeking to push out the frontiers and make higher education more effective than it has been. An increasing number are concerned with extending flexibility in the curriculum so that all students are encouraged to fulfill themselves in an educational pattern attuned to the individual's abilities, interests, and objectives.

If this ferment and experimentation at some colleges represent the more promising of two main alternatives, the scene at many colleges reflects its disquieting counterpart. Too many colleges today have become vast supermarkets, catering to the whims of the public, packaging their courses, marketing their wares, supplying every customer with a standardized product regardless of his interests and abilities. The standard curriculum may be satisfactory for the standard student, but at many institutions there are too many students who are bored with the work they are taking, duplicating material poorly learned in secondary school, being led slowly along the path of learning when they have the ability to race ahead of the pack.

³*Ibid.*, p. 23.

Test year for new physics course

Word of the nature and scope of a new physics course, one developed by a group called the Physical Science Study Committee, has caught the attention of forward-looking secondary schools throughout the country. Learning that the new course is very different in content and concept from conventional secondary school physics, these schools have demanded specific and tangible evidence that it can be taught at the high school level and that students will profit from it—in short, that the objectives set by the Committee can be fulfilled.

There have also been serious questions about the relevance of the course to the College Board Achievement Test in Physics. As early as the fall of 1957, teachers in the eight secondary schools which had been chosen to use the Committee's new course materials¹ asked if their students should be advised against taking the Board test. If so, they questioned would this be fair to students whose best subject was physics? How else, they wanted to know, would a physics test requirement for college admission be met?

Questions of both kinds have been and are being answered—the first and basic kind by the Committee's extensive program for obtaining both statistical and subjective evidence as to the effectiveness of the new course, and the second by the provision of a special College Board Achievement Test designed expressly for the several thousand PSSC course students who will elect to take a physics test in the spring of 1959.

The reasons for these extraordinary

efforts owe their origin to an experiment which this year—the real "test year" in the opinion of the PSSC—is engaging the attention of some 286 secondary schools and nearly 13,000 students. The experiment grew out of widespread expressions of dissatisfaction with high school physics which led to the establishment of the Physical Science Study Committee under the chairmanship of Dr. Jerrold R. Zacharias, professor of physics at the Massachusetts Institute of Technology. Informal discussions initiated by Profes-

2. Earnest attempts to keep up with scientific developments has made the textbooks into a patchwork in which the unity of physics was lost.

3. The mass of material in the textbooks had become too great to be taught in one, or even two, academic years.

4. With the increasing application of science in everyday life physics textbooks were putting more emphasis on technology, crowding out the basic unifying concepts of science.

Laboratory manuals and audio-visual aids were found to be as unsatisfactory as the textbooks. It appeared clear there was need for a completely fresh approach, starting from the very beginning.

A generous grant was given to the project in the fall of 1956 by the National Science Foundation,² and a steering committee of outstanding educators was formed.

By the spring of 1957 the committee had decided that new materials of many kinds would have to be developed if the course it envisaged was to become a reality, or even to be given an experimental trial. It was *not* to be a memory course in which students would be told in effect: "this is the way it is—you learn it!" Rather, starting with everyday experiences familiar to the student, it was to help him develop for himself, by logical analysis, the controlling ideas that distinguish much of modern physics from the physics of 75 years ago. In contrast to the existing curriculum, technology would be reduced to a minimum in order to avoid masking the unity of physics as a science.

A sequence of topics and arguments



sor Zacharias and held at M.I.T. in the summer of 1956 were instrumental in the formation of the working group which was to become the PSSC.

Confirmation of the Committee's premise was given by independent reports of the American Institute of Physics, the American Association of Physics Teachers, and the National Science Teachers Association. These reports added up to the following conclusions:

1. Most physics textbooks reflected the scientific outlook of 50 years ago, no longer representative of the views of the scientific community.

¹The Physical Science Study Committee is now jointly supported by the National Science Foundation, the Ford Foundation, the Sloan Foundation, and the Fund for the Advancement of Education.

¹Browne and Nichols School, Cambridge, Mass.; Bronx High School of Science, New York, N. Y.; George School, Newtown, Pa.; Hill School, Pottstown, Pa.; Phillips Exeter Academy, Exeter, N. H.; Radnor High School, Wayne, Pa.; Taunton High School, Taunton, Mass.; University High School, Urbana, Ill.

Special test offered

The special College Board test prepared for students taking the Physical Science Study Committee physics course is scheduled for Saturday morning, March 7, 1959, one week before the regular Board testing date. It will be offered only at that time and will be administered only at schools participating in the PSSC program. There will be no additional fee for candidates who take the special test and no more than two other Achievement Tests the following Saturday. The special test will be one hour in length and score reports will be expressed on the standard College Board scale and sent to colleges along with those of the regular March tests. The long-standing Board test in physics will, of course, be administered as in past years at the same time as the Achievement Tests in other subjects in March, May, and August.

leading to the goal of modern physics was outlined. Since those topics selected were to be treated intensively it was found that large chunks of subject matter traditionally taught for the sake of "coverage" could be dropped as not being essential to the line of reasoning. In no sense did the committee feel that the particular sequence of topics it happened to choose was the *only* one which could lead logically to twentieth century physics. It recognized that important specifics would be passed over in the new course in order to avoid clutter in the development of the main argument.

Not advanced course

The new course was to be designed at a level of difficulty appropriate for approximately 25 per cent of American secondary school students on the basis of their academic aptitude. Since this is approximately the typical aptitude range of students who have taken high school physics, the new course was *not* to be considered an advanced

course suitable only for the gifted student.

The "big push" in the summer of 1957 enlisted approximately 100 outstanding school and college physics teachers and other specialists in education, all working at M.I.T. under the general chairmanship of Professor Zacharias. Planning, writing, revising, and editing, the group fulfilled its hope for a preliminary tryout in a small number of select schools by producing a sizable portion of the new textbook and some of the laboratory materials, filmstrips, and the teacher's guide which would be needed. Everything prepared for the tryout—and the tryout itself—was considered to be only a first step leading to a continuing development of course materials during that academic year so that a sound revision of the course could be given and evaluated on a much larger scale during 1958-59.

The eight secondary schools selected for the initial experiment were in no sense picked to be representative of the academic spectrum for which the course was designed. In each case the teacher was the deciding factor. To insure good "feedback" to the PSSC, the teachers had to be thoroughly familiar with the aims, objectives, and content of the new course. Thus they had of necessity to be chosen from the group which had worked at M.I.T. on the course materials. The schools themselves were selected for their geographic proximity to the three regional university centers where weekly meetings of teachers and textbook authors were to be held during the tryout year.

The first year's experience with the new course was highly gratifying, whether measured by student and teacher reactions or by a special built-in testing program. The students were enthusiastic, not a single one having requested a transfer from the PSSC course to conventional physics sections whereas the opposite was frequently true. Teachers in the eight schools declared they would not wish to return to the conventional course and reported that their main problem was keeping class discussion within bounds.

Two kinds of tests were used to determine just how realistic and practical the new course was for the average student—the School and College Ability Test, an aptitude measure, and six

specially developed achievement tests. The latter were designed to show not only *what* the student had learned, but even more important, whether he had learned to *use* the ideas of physics in the variety of ways expected of him.

As expected, the aptitude testing revealed that, on the average, the experimental group of students was certainly the "upper crust" of the ability range for which the new course was designed. The mean composite verbal and quantitative score was approximately at the ninety-fifth percentile of the national norm group. However, the range of scores extended well below the seventy-fifth percentile, the latter being the approximate lower limit for



which the course was designed. Particular attention was therefore paid to the progress of the lower-aptitude students throughout the year.

The achievement test results were of special significance in proving unfounded the fears of authors of the new text that the level of difficulty of the tests would be beyond the capabilities of even this select group of students. Successive score distributions and statistical summaries throughout the year showed that these tests were just right for the students tested. A little extrapolation from the test data suggested, furthermore, that the course stood a good chance of being highly effective for a group of more typical students.

Even so, the question of these students' performance on the College

Board Physics Test was sufficiently in doubt to worry their schools. No one wanted to see any student's chances for college admission jeopardized in the slightest for having participated in this experiment. Before any solution could be considered, however, evidence was needed to determine the extent of the problem—or indeed whether a problem even existed.

Adjusted score reported

This dilemma was resolved by meeting the issue head-on. All seniors enrolled in the PSSC program who would normally take the College Board Achievement Test in Physics in March 1958 were encouraged to do so. At the same time, a joint letter from the Board and the PSSC explaining the nature of the problem was sent to admissions officers at all colleges to which these students were applying. The admissions officers were informed that the College Board would make a special study of the performance of the students and recommend how their scores should be interpreted. When the study indicated beyond question that the College Board test performance of the 73 PSSC students was substantially below that to be expected in terms of their scores on the Scholastic Aptitude Test and comparative performance with non-PSSC students on those parts of the test where there was overlap between the two physics curricula, a statistical score adjustment was made and the adjusted score was reported to the colleges.

The study's conclusions, coupled with the fact that thousands of PSSC students would wish to take a College Board Physics Test in 1959, led the Board's Committee on Examinations to decide that a special test designed

for the PSSC curriculum should be offered at schools giving that course on March 7, 1959. This special test is considered a strictly stop-gap measure pending exploration by the Board's examiners in physics, working with the staff of Educational Testing Service, of the possibility of devising a more versatile physics test for use in the regular Board program. A pilot study of this problem is now in progress.

In the meantime, during 1958-59 the PSSC is proceeding on the basis of what was learned in the preliminary tryout and with the hope of finding the answers to two major questions:

1. Can the average secondary school physics teacher, without unreasonable



effort, become sufficiently familiar with course content to handle it effectively?

2. Will the course communicate to the total range of students who typically enroll in high school physics?

In the first year due allowance had to be made for the extraordinary enthusiasm and motivation of the teachers who were working with equally enthusiastic and highly motivated students. The students relished being "guinea pigs," particularly in a year when the coincidental launching of Sputnik focused national attention on "doing something about high school physics."

In recognition of the need to familiarize interested school teachers with the content and philosophy of the new approach to physics, special summer institutes sponsored by the National Science Foundation were held last July and August at Bowdoin College, the

University of Connecticut, the University of Minnesota, Reed College, and the Oak Ridge Institute for Nuclear Studies. At these institutes some 300 teachers selected from a large applicant group spent up to eight weeks of intensive study of the new curriculum under the tutelage of PSSC representatives and faculty members of the host institutions.

Institutes in progress

A large majority of these teachers are conducting the new course at their schools this year. In addition, in-service institutes and academic-year institutes are currently in progress at various colleges and universities with a view toward an even more widespread use of the PSSC curriculum in 1959-60.

On the students' side of the experiment, not only will the subjective judgments of the teachers be sought by the PSSC but a full-scale testing program will yield a series of at least 13 statistical reports based on a battery of one aptitude and 12 achievement tests. With the number of students involved this year it will be possible to draw conclusions of statistical significance relevant both to the group as a whole and to various student aptitude levels within it.

In other words, the program is attempting to appraise itself in 1958-59, to find out how good the new course is thought to be by teachers and how well it is found to work with a large number of students of different abilities. Beyond that, plans are now being made for next year to see how the PSSC course compares with conventional physics instruction. The ultimate test, of course, is whether it will go as far as the PSSC hopes toward solving a serious national problem.



Frederick L. Ferris, Jr., is associate director of the Test Development Division of the Educational Testing Service.



Doris A. Lane is divisional secretary of the Test Development Division of the Educational Testing Service.

Georgia's search for solutions

16-college system introduces admissions testing, central research service to guide future policy determination

Early in 1957 the Board of Regents of the University System of Georgia required all applicants for admission in 1957-58 and subsequent years to take the College Board Scholastic Aptitude Test. Its action represented one of the few occasions on which a single admissions test requirement had been introduced at once throughout an entire state system of higher education.

As a result of the test requirement, the system's 16 institutions—junior colleges, senior colleges, technical institutes, teachers colleges, and the university—were suddenly provided with masses of new data relevant to admissions decisions. And for some 16,000 white and Negro applicants in the first year, the last great open door to higher education had seemingly started to creak shut.

However, the testing program was not inaugurated as an immediate and easy solution to the problem of keeping enrollment within bounds; the colleges were not yet badly crowded. Nor was it intended as a superficial attempt to suggest that the colleges were improving their quality by admitting only students of high intellectual ability. The program was not initiated as an undercover maneuver to preserve segregation nor to minimize integration.

The notion of a system-wide testing program had first been considered in the late 1940's by an advisory committee appointed by the chancellor of the University System of Georgia.

Meeting over a period of several years, the committee concluded, in the main, that the value of test data for student guidance or faculty use could be enhanced by pooling data, technical personnel, and equipment from all the

institutions in the system. It felt that this should be done through a central research person or service with system-wide responsibilities along with staff and computational equipment which would be useful for all the colleges but beyond the means of any one. In a system in which student IQ's ranged from the middle 80's to the high 130's and where each institution offered a variety of curricula, it seemed that the data generated by a system-wide testing program and central research service could have tremendous implications for guidance as well as admissions policy.

Regents concerned over future growth

In the meantime, the board of regents of the university system had become increasingly concerned about the quality of instruction at its institutions. As with many other such groups in recent years, it had a growing awareness that building programs, additional financial support, and other customary measures alone could not guarantee top-quality instruction and the fullest development of the students' potential abilities. The board was also becoming anxious to find legitimate ways to deal with increases in numbers of applicants that might outpace any realistic expansion of college facilities, and to define the kinds of new facilities needed.

Since approximately 50 per cent of the students entering the system's colleges never completed any regular course of study, it seemed to the regents that a testing program which could identify potential failures before admission might promise some defensible criteria for exclusion. Such a test-

ing program, the regents also felt, might help to determine the different levels of student ability and achievement in the system's various units, and to develop reasonable standards; in addition, it would permit each college to profit from the experience of the others in the system. A ready vehicle for realizing these ends was afforded by the recommendations of the testing and guidance committee, and the chairman of this committee was given leave from other duties to set the program in motion.

Thus, the testing program at a system-wide level was inaugurated to provide extensive information for the faculties and administration of each institution to use in examining its policies and practices. This information was to be produced efficiently through a central psychological research service. Problems were thus to be solved with procedures developed not only by administrators and admissions officers, but by psychological research and guidance specialists as well.

Through 1956-57, the first year in which the SAT was required, students continued to be admitted without regard to test scores. This was done in order to permit later analysis of aca-



J. A. Davis, formerly director of testing and guidance for the Board of Regents of the University System of Georgia, is now dean of the Graduate School and professor of psychology and education at the University of North Carolina at Greensboro.

demic achievement at all levels of ability. Other kinds of data, including the high school average, were obtained for students who actually enrolled. As their first-quarter and freshman-year grade averages became available, the relationships of test scores to grades in each institution were determined. After exploratory attempts, these findings were expressed in a useful, non-technical formulation. We now await the chance to determine whether the relationship and performance standards found for the 1957 entering class hold for the new classes and may thus be trusted when standards based on any one year's group are applied to the next entering classes.

After a year of operation, what have we found? What lessons have we learned? Have our caution and efforts seemed justified?

First, scores on the SAT would seem to indicate that our colleges attract students of a wide range of ability. The dramatic implications of this are illustrated in Table 1, which shows the range of students' SAT-Mathematical scores at two Georgia state colleges. In a neighboring state, 350 had been set as a cutting score (or minimum score for admission to college). Had we done this in Georgia before knowing the score ranges of students at each institution, we would have excluded only 1 per cent of the freshmen at the table's College B (which was already crowded), but 98 per cent of the freshmen at College A (which needed more students than it admitted last year to support its plant and faculty).

In view of this, it was clearly more

Table 1. SAT-M score distribution of freshmen^a at two Georgia colleges

SAT-M score	College A	College B
750	98	
700	96	
650	90	
600	73	
550	49	
500	29	
450	13	
400	4	
350	98	1
300	95	
250	40	

^aPer cent of students scoring below indicated scores.

Table 2. Percentages of students with selected SAT-V scores who made satisfactory first-quarter grades^a at four Georgia colleges^b

SAT-V score	College 1	College 2	College 3	College 4
750	96	98	99	99
700	92	96	99	99
650	86	93	99	98
600	79	87	98	95
550	69	80	96	91
500	58	69	89	84
450	46	57	79	74
400	34	44	63	63
350	24	32	46	50
300	15	21	28	37
250	10	13	15	25

^aThe average required for graduation, or an average of C or better.

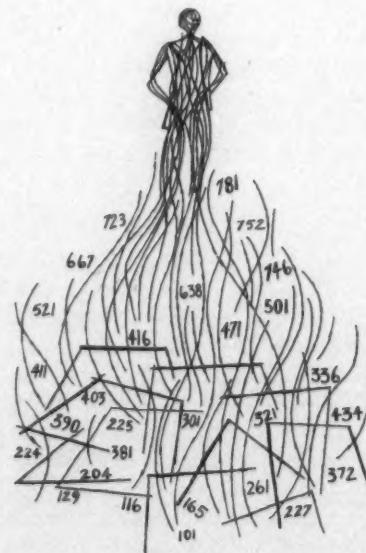
^bCollege 1 is a technical institute; College 2, a four-year liberal arts college; College 3, primarily a teacher-training institute; and College 4, a junior college. The percentages given represent smoothed probabilities developed from the deviation of the grade predicted by SAT-V from criterion grade (C), in terms of the standard error of estimate.

important for us to determine the meaning of test scores and other pre-admissions indices in our colleges than to set cutting scores. Test scores can be translated into probabilities for students' success by simply waiting to see what proportions of students at different score levels succeed scholastically. Table 2 shows how findings like these were tabulated for freshmen at College 1, a technical institute; College 2, a four-year liberal arts college; College 3, primarily a teacher-training institution; and College 4, a junior college. For example, Table 2 shows that in College 1, the technical institute, 96 per cent of those students with SAT-V scores of 750 made satisfactory grades in their first quarter, while only 58 per cent of those with scores of 500, or 10 per cent of those with scores of 250, made a satisfactory average. Thus, the meaning of an SAT-V score of 250 at College 1 is that nine out of every 10 students with such scores fail to make satisfactory grades in their first quarter.

Analyses of this kind were made using average grades first for the first quarter of the freshman year, and then for the entire freshman year, as the criterion. The findings from both analyses are in close agreement. We have found that the SAT holds up very well as a predictor of grades in our state colleges, even though we had feared that this might not be true in the populations from which the state colleges draw. If the test is biased toward a particular kind of person, then our

faculties, like private college faculties, are similarly biased.

Our research has not been confined to College Board test scores. Another finding substantiates experience elsewhere: in general, the best single predictor of college grades is not a test but the high school average, or high school rank in class when converted to statistically usable form. Fortified with this finding, we can more easily see the dangers of an admissions policy based on test criteria alone. We believe that admissions policies which ignore the evaluations of high school teachers would in time not only make for poor public relations, but also might encourage young people to let high school



work slide because they would know that test scores alone determined admission. We think it important to encourage students to meet the demands that high schools as well as college faculties make on them.

We have also found that for each college the most accurate prediction of college performance is obtained from a combination of measures. Students with high test scores and poor high school records do not do as well as those with high test scores and good high school records. In combining measures, we found it simple to use statistical (multiple-regression) techniques which determine, for each group, the best weightings of the several predictors for a combined index of maximum accuracy in predicting grades. This process, when applied to students at different colleges and in varied curricula, shows that no single system of weighting the different measures is satisfactory.

Table 3 shows the weights that were found best for the major pre-admissions indices when applied to men students at four of the system's 16 colleges. These weights represent values which would hold if *all* measures were expressed on identical scales (that is, they are "beta weights"); the measures or variables may therefore be compared directly.

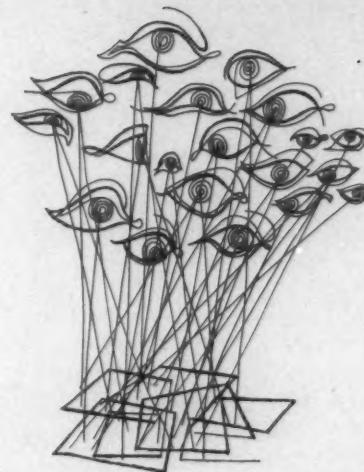
Thus, at the table's college X, to predict grades most accurately, we found that the SAT-V score needed about one and one-half times the weight given the SAT-M score and only about three-fourths of the weight given the high school average. But at college Z, the SAT-V score needed about three times the weight given the SAT-M score and about 13 times the weight given the high school average. The most significant feature illustrated by this is that different colleges seem to require different weightings. These analyses have

provided us with some empirically derived values which may be tested on new groups in subsequent years.

Treatments of data like those described above are relatively straightforward for the test psychologist, and he can quickly compute such correlations and weights with electric calculators or IBM machines. Yet, our admissions officers who must utilize the findings are neither testing nor research specialists. Many of our colleges have had good local research performed by a faculty member available to them, but it had never found its way to the admissions office, or, if so, had not been understood. A major part of the first year of the testing program was consequently spent in schooling admissions personnel in basic statistics useful to them. Along with this, provision was made for an annual training conference staffed by competent personnel.

Technical data made usable

Technical reports for each college have been prepared by the central testing and guidance service. These were written and reviewed carefully to insure that in them issues would be adequately defined and technical data reduced to a form which the director of admissions or a clerk in his office could handle. The reports have included formulas for making the proper combination of pre-admissions information on the student, and the range of error found in such predictions. Thus, each applicant may be assigned a probability of scholastic survival, and the degree of risk the pre-admissions indices show for each applicant may be determined for use in making admissions decisions. The summary characteristics of the present class or group of applicants, in terms of probability of survival, form a basis for



comparison in the study of future groups.

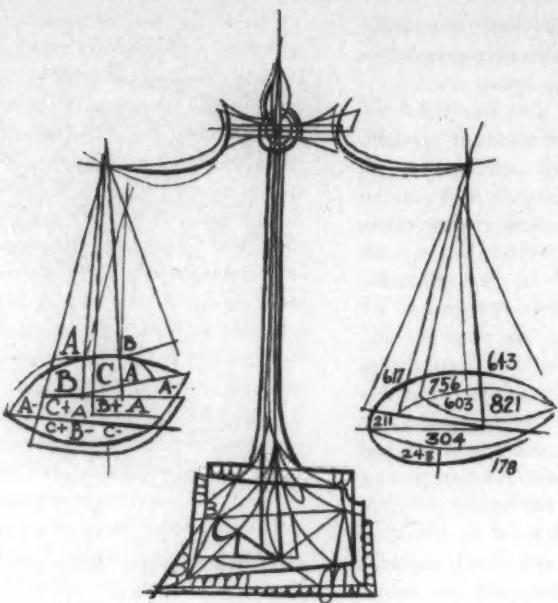
In connection with the program, each college has established or reactivated admissions committees having faculty and administration representatives as members to aid the admissions officer in the formulation of policy and standards. For 1958-59, most colleges in the university system have decided to use present findings for testing various "trial" admissions policies, planning to continue to admit students as in pre-College Board testing days but to examine what would have happened had these trial admissions policies been in effect. Doing this permits identification of the factors which may be anticipated as well as those which may fluctuate from year to year; it also clarifies faculty philosophy regarding reasonable attrition rates and the role the institution is playing or should play in the total structure of the state's higher education program. Most of the colleges have also made some provision for counseling applicants whose test scores indicate an extremely high risk of failure.

Although the main feature of the system-wide testing program is provision of an orderly, systematic research and advisory service for the colleges, there are other promising features. As we have examined our data, we are impressed with its implications for high school guidance. We have been able to report to high school teachers, for example, that the following percentages of students earned passing grade averages in 1957-58 at the University of Georgia: 92 per cent of

Table 3. Comparative weights* given to three measures in predicting first-quarter average freshman grade at four Georgia colleges

Institution	SAT-V	SAT-M	High school average
College W	.30	.19	.34
College X	.28	.19	.40
College Y	.06	.27	.44
College Z	.53	.17	.04

* "Beta weights."



those with A averages in high school, 68 per cent with B averages, 29 per cent with C averages, and 6 per cent with D averages. Release of such information has not only eased fears of high school people that the state colleges may be becoming test-centered, but has given them a means of guiding and motivating students which we believe will produce better applicants.

Individual standards needed

We have been impressed with institutional factors which students' test scores help identify. Our having found that different proportions of students (as well as students at different score levels) do satisfactory work in the various colleges suggests a need to define reasonable standards of achievement and to improve grading systems. We foresee new areas for systematic study which may help the faculty at each college to define its ideal student, and the admissions officer to select him. Among our 16 colleges, there exist various programs with various goals; the processes we are following may be applied intelligently to each of these programs, and the research findings can be used in planning new facilities as they are needed and as funds become available.

Since introducing the state-wide testing program, we have reached a number of important conclusions. Although these conclusions have been

implicit in the foregoing account, it may be well to summarize at this point.

In our program, test scores should be used to predict academic performance—not to reduce the size of a class, to show preference to particular cultural groups, nor to attempt to improve the quality of an institution.

The most meaningful and useful way for us to express a test score is in terms of the probability of scholastic survival found for students with that score.

The meaning of a particular test score may vary from college to college; in the 16-college system, the different institutions vary in the ability levels of students they attract, in the proportions (and also ability levels) of students who fail, and in the degree of relationship found between a predictive index and college grades (these variations, we suspect, exist not only among colleges but among programs at individual colleges).

The only way to determine the meaning of test scores or other pre-admissions indices is to compare them with later measures of college performance. As the ability levels of students, attrition rates, and the like may change from year to year, this needs to be a continuous process.

Provision of a research service for the orderly accumulation, analysis, and translation of admissions data can facilitate greatly its incorporation into policy. Some aspects of admissions work involve rather technical prob-

lems, and a professional consulting and advisory service is very helpful. Our typical past experience, in which an occasional faculty member would do an occasional piece of research which may or may not ever have reached the admissions office, seems to indicate that a college or group of colleges needs to assign research responsibilities to appropriate specialists and to give them sufficient time for necessary work. Such research specialists should play no more than a fact-finding, advisory role for those college officers who formulate policy. Most problems which plague the admissions officer, whether they be determining the value of a recommendation by a high school principal or dealing with multiple applications, could be eased by professional investigation.

Our establishment of active, well-informed admissions committees representing a cross-section of faculty and administration has resulted in many benefits. Admissions decisions should be directly related to the role of the institution and the standards of the faculty, and the use of advisory groups helps to insure such wise direction and support of admissions practices. But the major advantages of introducing these committees have been realized in the framework they have provided for necessary and healthy communication between the college faculties and the admissions officers who supply them with their student raw material, for development of the ability to relate admissions policy directly to institutional goals, and for recognition of the urgent need to define these goals and to measure progress toward them.

Finally, in the testing program we have found promises of information of great value in counseling high school students. This possibility, properly exploited, means that we will be able to help young people choose a suitable college or curriculum as well as help the colleges choose suitable students. This not only accords with our democratic beliefs, but may help us find among applicants a higher proportion of able students than ever before.

Time will tell if our basic plan has been sound. However, having waited for data permitting some analysis of the consequences of various policies before putting them into effect, we are thankful that we have been patient.

- Adelphi College*
- Agnes Scott College†
- Albertus Magnus College*†
- Alfred University
- Allegheny College
- American International College*
- Amherst College
- Annhurst College*†
- Antioch College*
- Assumption College[○]
- Bard College
- Barnard College†
- Bates College
- Beaver College*
- Beloit College
- Bennington College†
- Boston College
- Boston University
- Bowdoin College
- Brandeis University
- Brown University
- Bryn Mawr College†
- Bucknell University
- Caldwell College*
- California Institute of Technology
- Carleton College
- Carnegie Institute of Technology
- Carroll College (Wis.)[○]
- Case Institute of Technology[○]
- Catholic University of America*
- Cedar Crest College
- Centre College of Kentucky
- Chatham College
- Chestnut Hill College*†
- City College of the City of New York[○]
- Claremont Men's College
- Clark University (Mass.)[○]
- Clarkson College of Technology
- Coe College[○]
- Coker College*†[○]
- Colby College
- Colgate University
- College of Mount Saint Vincent*
- College of New Rochelle*
- College of Notre Dame of Maryland*†
- College of Puget Sound[○]
- College of Saint Elizabeth*
- College of Saint Rose[○]
- College of the Holy Cross
- College of William and Mary*
- College of Wooster
- Colorado College*†
- Columbia College (N. Y.)
- Connecticut College[○]
- Converse College[○]
- Cooper Union
- Cornell College[○]
- Cornell University
- Dartmouth College†
- Davidson College
- Denison University
- DePauw University
- Dickinson College
- Douglas College

- Drew University
- Duke University
- Dunbarton College of Holy Cross*
- D'Youville College*
- Elmira College*
- Emerson College[○]
- Emmanuel College
- Emory University
- Fordham College*
- Franklin and Marshall College*
- Furman University
- Georgetown University
- George Washington University
- Georgia Institute of Technology
- Georgian Court College*
- Gettysburg College
- Gonzaga University[○]
- Goucher College†
- Grinnell College
- Hamilton College
- Hampden-Sydney College
- Harvard College
- Haverford College
- Hobart College and William Smith College†
- Hofstra College[○]
- Hollins College†
- Hood College
- Immaculata College*
- Immaculate Heart College*
- Iona College
- Jackson College for Women
- Johns Hopkins University[○]
- Kalamazoo College*†
- Kenyon College
- Keuka College
- Knox College
- Lafayette College
- Lake Erie College
- Lake Forest College
- La Salle College†
- Lawrence College*
- Lebanon Valley College[○]
- Lehigh University
- Lewis and Clark College
- Loyola University of Los Angeles*†[○]
- Loyola University (La.)[○]
- Lycoming College[○]
- Manhattan College†
- Manhattanville College of the Sacred Heart†
- Marquette University[○]
- Mary Baldwin College*†
- Marymount College (N. Y.)*
- Mary Washington College of the University of Virginia[○]
- Marywood College*†
- Massachusetts Institute of Technology
- McGill University
- Menlo College[○]
- Mercer University
- Michigan State University
- Middlebury College*†
- Mills College
- Moravian College*
- Mount Holyoke College†

College Board member colleges

Check (✓) indicates participants in the College Scholarship Service. Dot (•) indicates subscribers to the May 20 Candidates Reply Date Agreement for 1959 (see page 3). An asterisk (*) following a college's name means scholarship candidates are excepted from the Candidates Reply Date Agreement; a dagger (†) means single-choice, "early decision" candidates are excepted from the Agreement; a dot in a circle (○) indicates colleges elected to membership at the Board meeting on October 29.

- Mount St. Agnes College*†[○]
- Mount St. Mary's College (Calif.)[○]
- ✓ Muhlenberg College
- ✓ Muskingum College
- Nazareth College (N. Y.)
- Newark College of Engineering*
- Newcomb College of Tulane University*†
- Newton College of the Sacred Heart
- ✓ New York University
- North Carolina State College[○]
- Northeastern University[○]
- Northwestern University
- Norwich University†[○]
- Notre Dame College of Staten Island*
- Occidental College
- ✓ Ohio Wesleyan University
- Pembroke College in Brown University†
- ✓ Pennsylvania State University
- Pomona College
- Presbyterian College[○]
- Princeton University
- Providence College
- Queens College (N. C.)
- Radcliffe College†
- Randolph-Macon Woman's College†
- Reed College
- Regis College (Mass.)
- Rensselaer Polytechnic Institute
- Rice Institute
- Ripon College[○]
- Rollins College
- Rosary College[○]
- Rosary Hill College*○
- Rosemont College*
- Rose Polytechnic Institute[○]
- Russell Sage College
- Rutgers, the State University of New Jersey
- St. Joseph College (Conn.)†
- St. Joseph College (Md.)*
- St. Joseph's College (Pa.)
- St. Joseph's College for Women*
- ✓ St. Lawrence University
- St. Mary's College (Ind.)*
- St. Michael's College[○]
- Salem College (N. C.)*†
- Sarah Lawrence College†
- Scripps College
- Seton Hall College*
- Shorter College (Ga.)
- Simmons College
- Skidmore College
- Smith College†
- ✓ Southwestern at Memphis
- Springfield College[○]
- Stanford University
- ✓ Stetson University[○]
- Stevens Institute of Technology
- Swarthmore College
- Sweet Briar College†
- ✓ Syracuse University
- Temple University[○]
- ✓ Thiel College
- Trinity College (Conn.)
- Trinity College (Wash., D. C.)*
- ✓ Tufts College of Tufts University
- Tulane University*†
- Union College (N. Y.)*†
- United States Air Force Academy
- United States Merchant Marine Academy
- United States Military Academy
- United States Naval Academy
- University of California
- University of Chicago†
- University of Colorado
- University of Connecticut
- University of Denver
- University of Georgia
- University of Maine[○]
- University of Massachusetts
- University of Michigan
- University of North Carolina[○]
- University of Notre Dame
- University of Pennsylvania
- ✓ University of Pittsburgh[○]
- University of Redlands
- University of Rhode Island*
- University of Rochester†
- University of San Francisco
- University of Santa Clara[○]
- University of Southern California
- University of the South
- University of Vermont
- University of Virginia
- Upstate College*○
- ✓ Ursinus College
- Valparaiso University
- ✓ Vanderbilt University[○]
- Vassar College†
- Villanova University
- Wabash College
- Wagner Lutheran College
- Washington College[○]
- Washington and Jefferson College*
- Washington and Lee University[○]
- Wellesley College†
- Wells College
- Wesleyan College (Ga.)[○]
- ✓ Wesleyan University
- Western College for Women
- Western Reserve University
- Wheaton College (Ill.)[○]
- Wheaton College (Mass.)†
- Wheelock College*†
- Whitman College
- Whittier College
- Willamette University[○]
- ✓ Williams College
- ✓ Wilmington College (Ohio)[○]
- Wilson College
- Woman's College of the University of North Carolina[○]
- Worcester Polytechnic Institute
- Yale University
- Yeshiva University

Non-member colleges participating in CSS

- Bradford Junior College
- Bradley University
- Clarke College (Iowa)
- Colby Junior College
- Illinois College
- Illinois Wesleyan University
- John Carroll University
- Junia College
- La Verne College
- Lindenwood College
- Monmouth College (Ill.)
- National College of Education
- Oberlin College
- Pennsylvania Military College
- Pfeiffer College
- Polytechnic Institute of Brooklyn
- Pratt Institute
- Rhode Island School of Design
- St. John's College (Md.)
- St. Joseph's College (Ind.)
- St. Olaf College
- Transylvania College
- University of Buffalo
- University of Kansas City
- University of New Hampshire
- Wake Forest College
- Westminster College (Pa.)
- Wittenberg College

NEWS OF THE COLLEGE SCHOLARSHIP SERVICE

Federal loan aid discussed

At fifth annual meeting: Guest speakers on the morning program of the fifth annual meeting of the College Scholarship Service, held October 28 in New York City, discussed the new federal act providing an initial \$47,500,000 for college student loans, a college's experience in introducing a plan for charging students the "full cost" of their education, and the need for having student loans play a greatly expanded role in the financing of higher education (see p. 14).

In the afternoon business session, reports on the Service's affairs were presented by the following Subcommittee Chairmen: Computation—Robert K. Hage, director, office of financial aid, Dartmouth College; Operations—Thomas P. Pitré, director, student aid center, Massachusetts Institute of Technology; Research—Charles C. Cole, Jr., dean, Lafayette College; and Scholarship Practices—Ben F. Cameron, Jr., director of admissions, University of the South.

Gene D. Gisburne, vice president in charge of student affairs of the University of Pennsylvania, presided at the meeting. Dr. Gisburne had recently succeeded John F. Morse, vice president of Rensselaer Polytechnic Institute, as Chairman of the CSS Committee.

Some 250 persons attended the meeting, among them representatives of the Service's 193 participating colleges (see list p. 33) and guests from secondary schools and other colleges.

Schools, juries scheduled

To teach computation: Basic instruction in CSS computation procedures was offered for the second time in a three-day "computation school" program conducted by the Service Novem-

ber 17-19 in Princeton, New Jersey. Representatives of some 40 colleges attended and five present or former CSS Committee members served as instructors.

A second computation school has been scheduled for January 5-7 at Knox College in Galesburg, Illinois, and will be the first to be given in the Midwest. The three-day computation school offering was introduced last year.

Juries to resume: "Jury duty" for representatives of participating colleges will resume in mid-January and continue until mid-April. Held on Friday of every other week at the Service's operations office at Educational Testing Service in Princeton, New Jersey, the jury sessions resolve complex need assessment cases. Financial aid officers representing some 50 colleges took part in last year's jury sessions. Each participating college is urged to send representatives to at least some of this year's sessions to contribute help and to gain valuable experience.

Sponsors' booklet issued

For non-collegiate programs: Services now provided by the CSS for corporate and other non-collegiate scholarship program sponsors are explained in a recently published booklet entitled, "College Scholarship Service—Aid to effective scholarship program administration." The booklet describes the planning and administrative assistance available to sponsors through the CSS.

Sponsors may make as much or as little use of the complete range of services available as they wish, the booklet explains. Copies will be sent on request to college officers, who may give them to sponsors seeking assistance with their programs.

Short computation introduced

Computation charge reduced: The cost of computations provided by the CSS to participating colleges was reduced from \$2 to \$1.50 each, beginning this fall. Supplied in worksheet form, computations are estimates of the share of a scholarship applicant's college costs that his family can reasonably afford. They are based on information given by parents on the Service's confidential statement form, which is required by all participating colleges.

Reduction in the price of computations was made possible by introduction of abbreviated procedures for preparing the estimates. In the short procedures, special factors and unusual circumstances that affect only a small proportion of cases are not taken into account. Trial computation of a large number of cases last year by both the short method and the established long procedures indicated that the shorter system produces estimates that will be within \$100 of the amount produced by the long method in 90 per cent of all cases.

A total of 69 participating colleges has ordered computations from the Service for the year, 40 colleges contracting for them on all their financial aid applicants and 29 colleges contracting for computations on some applicants. Last year, 39 colleges ordered computations on all applicants and 32 on some applicants.

Manual explains: A detailed description of the short computation procedures is given in the 1958-59 *Computation Manual*, which was issued in November. Two copies of the new edition of the *Manual* have been sent to each CSS participating college. Additional copies may be obtained from the Service by these or any colleges for \$2 per copy.

